ISSN 0188-4018
ISBN 978-607-7597-02-5

ICONES ORCHIDACEARUM

Fascicle 13

THE GENUS EPIDENDRUM

Part 9

"Species New & Old in Epidendrum"

Eric Hágsater

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ICONES ORCHIDACEARUM

Fascicle 13, plates 1301 to 1400

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Reference Map

TROPICAL AMERICA
(numbers refer to the portions of the map used in individual plates)



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THE GENUS *EPIDENDRUM*
Part 9
Species New & Old in *Epidendrum*

Foreword

In this 9th installment of The Genus *Epidendrum*, we present 30 species new to science and 2 new status. Many names, including synonyms, are lectotipified or neotipified, and in some cases previous lectotipifications are rejected.

All the new species are from South America, from Peru (11), Colombia (7) and Ecuador (7), but also from Venezuela (3), and one each from Brazil and French Guyana. We thank the collaboration of amateurs and botanists from these and other countries for bringing to our attention some of these, and their help in understanding several groups of species which had previously been lumped together. We also thank the directors and staff of various herbaria including CUVC, HOXA, HUT, MO, USM, and VALLE for their help in getting images of herbarium material, and in some cases digital images of the live plants before they were pressed, or in examining flowers in spirit, to confirm various details. The increasing availability of digital images of herbarium material on the internet is proving most useful.

Two groups of species have surprised us, one, with bright red-orange flowers from the high altitude Jalca in Peru, where *Epidendrum jalcaënse* Chocce, Dalström, Hágsater & Arnaiz was recently described, and here we add *Epidendrum camilo-diazii* Hágsater & Chocce, and *Epidendrum vegae* Chocce & Hágsater; they all belong to the small Aristisepalum subgroup.

The other is *Epidendrum nora-mesae* Hágsater & O.Pérez, from southern Colombia, and *Epidendrum peristerium* Hágsater & E.Santiago, a species we have long known from Antioquia, but confused with *Epidendrum convergens* Garay & Dunsterville; together they form the Convergens complex, a part of the Albertii group, Allenii subgroup. All have 3-lobed lips with white to green flowers.

Another discovery is that the Brazilian *Epidendrum crpytoglossum* Pabst is synonymous with the colombian *Epidendrum rothii* A.D. Hawkes, a species that has not been seen for over a century, and whose lip structure was misinterpreted by Schlechter when he originally described it as *Epidendrum juncifolium* Schltr.

In preparation to the publication of Flora Mesoamericana, we have tried to include the remaining species from that region which had not been previously included in the Icones series. Some include lectotipifications, but no new species are described from either Mexico or Mesoamerica.

On the other hand, we have included many species of the Pseudepidendrum Group, usually lumped with *Epidendrum paniculatum* Ruiz & Pavón. This is a complex group with either green and white flowers, sometimes marked with reddish purple, or in other cases pink to purple, or orange flowers. They all have what we have called "bird-wing-type" pollinia, that is very thin, translucent pollinia, with a sharp edge, and a very even surface. The only other group of species with similarly flat pollinia is the Aberrans subgroup in the Oerstedella group.

A novelty in this issue is that we have new versions of four previously published Icones, updating the information. *Epidendrum hagsateri* Christenson replaces *Epidendrum pugioniforme* Regel (Icon. Orchid. (Mexico) 1: pl. 39), as the latter name is now considered a synonym of *Epidendrum parkinsonianum* Hook. For *Epidendrum parkinsonianum* we supply a full range of distribution, and specimens seen, and include a note on the natural hybrid with *Epidendrum falcatum* Lindl. of which a single collection is known to us. *Epidendrum spasmosum* Hágsater & Dodson is again published with a description based on the type and excluding specimens which are now considered as a different species, *Epidendrum oripicoranense* Hágsater & E.Santiago proposed as new in this volume. *Epidendrum lindae* Hágsater & Dodson is again published with a modified illustration, as in the original, prepared from flowers in liquid, we failed to notice the ornamentation of the lip which is papillose, and which is easily seen in fresh material, but hidden when drawing from a wet lip.

We wish to thank Jerzy Rzedowski, Franco Pupulin and Carlyle A. Luer for the translations of the Latin diagnoses. Ricardo Fernández at USM, Edwin Becerra at HOXA and Washington Galiano at CUZ for their help in searching for material.

Eric Hágsater

Mexico City, December 2010.

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APPENDIX 1: Additional information to texts of plates

EPIDENDRUM ATACAZOICUM Schltr. Plate 1305

OTHER SPECIMENS: ECUADOR: Whithout data, W-R 17027! Ibid. W-R 50189! Ibid. W-R 15918! Ibid. W-R 4491! *Bull s.n.*, K-L! "Colombia", *Hartweg s.n.*, W-R! El Equador, *Loodiges s.n.,* K-L! South America, *Pearce 46*, K-L! Without data, *Sodiro s.n.*, QPLS x6! Valle Pululahua, *Sodiro 169*, QPLS x2! **Azuay:** Molleturo, 2650 m, 21 VII 1985, *Dodson 15942*, AAU! MO! QCA! QCNE! W of Cuenca, 2300-2800 m, *Lehmann 8191*, AMES x2! K-L! Huayaquil [Cuenca to Guayaquil] *[Tafalla] Pavón*, BM! [Incorrectly annotated as type of *E. paniculatum*.] BR! F! G! W-R! Soldados, Hort. Ecuagenera, 2000 m, pressed cult. 8 IX 1999, *Portilla sub Hágsater 12284*, AMO! Huigra, 3 IX 1918, *Rose 22524*, AMES x2! NY! In sylvi Llalla, in montis Azuay, VIII 1959, *Spruce 6073*, K-L! W-R x2! **Bolivar:** Guaranda, 2550 m, 13 VIII 1939, *Asplund 8212*, G! NY! S! Urcu-Chillanes, 2600-3000 m, 3 XI 1943, *Acosta 6612*, F! **Cañar:** El Corazón, 8300 ft, 6 IX 1944, *Prieto CP-7*, AMES x2! NY x2! **Chimborazo:** Sibambé*,* 2000 m, 18 VIII 1943, *Acosta 5412*, F! Cola-Guayaquil, 2900 m, 11 VII 2000, *Álvarez 2665*, MO! NY! QCNE! Pallatanga, 2800-3200 m, 13 VII 1995, *Clark 1328*, MO x2! QCNE! Pallatanga, 1700 m, 1 VII 1982, *Dodson 13155*, SEL! Pallatanga, 2000-2500 m, 24 XI 1988, *Andreetta sub Hágsater 9754*, AMO x2! (Illustration voucher). Río bamba-Guayaquil, 2500 m, 7 VIII 1977, *Luer 1822*, SEL! Pallatanga, X 1858, *Spruce s.n.*, K-L! **Cotopaxi:** Pilaló, 2400 m, 3 VII 1968, *Holms-Nielsen 1243*, AAU! AMES! **Loja:** Oña-Saraguro, 2500-2800 m, *Lehmann 8315*, K-L! **Pichincha:** Santo Domingo, 2500 m, *E181*, AMES! Andinum Quitensium, *Jameson s.n.,* G! Chiriboga, 2650 m, 1 VII 1955, *Asplund 16704*, AMES! Aloag-Tandapi, 2900 m, 31 X 1961, *Dodson 1031*, QCA! QCNE! SEL! Quito-Santo Domingo via Chillogallo, 2300 m, 3 V 1985, *Dodson 15829A*, MO! Lloa-Mindo, 2600 m, 3 VII 1987, *Dodson 17258*, AMO! MO! QCNE! Lloa, 9000 ft, 1856, *Jameson 356*, AMES! E! GH! K-L! P! Monte Pichincha, VI 1863, *Jameson s.n.*, K-L! W-R 49548! Lloa-Mindo, 2900 m, 9 VII 1988, *Jørgensen 65456*, QCA! Aloag-Tandapi, *Spruce 6053*, W-R! Cornejo Astorga, 2850 m, 29 V 1979*, Løjtnant 13990*, AAU! GB! QCA! Lloa, 1873, *Sodiro s.n,* AMES 66113! 66110! Pululahua, *Sodiro s.n*, QPLS! Mindo, 2860 m, 31 V 1986, *Zak 1011*, AAU! QCA! **Tungurahua:** near Baños, 2100 m, 7 X 1961, *Dodson 875*, SEL! Juivi, 2400 m, 7 I 1962, *Dodson 1881*, SEL! Vulc. Tungurahua, VIII 1901, *Sodiro s.n.*, QPLS!
OTHER RECORDS: Without data, ex Hort. Bull, illustration of flower, W-R 34932! **EUADOR: Pichincha:** Valle de Lloa, 12000 ft, *Jameson s.n*., illustration of flower, W-R 49522!

EPIDENDRUM CAPRICORNU Kraenzl. Plate 1309

OTHER SPECIMENS: ECUADOR: Loja: Vicinity of Mercadillo, at La Poza, 1700 m, 12 VIII 2000, *Madsen 7066*, QCNE! **PERU:** Hort. Easton, MA, without locality, 30 X 1995, *Hágsater 11149*, AMO! USM! Ibid. 23 VIII 1996, *Hágsater 11149*, AMO! (spirit) Ibid. 22 VIII 1997, *Hágsater 11149*, AMO! HUT! Hort. without locality*, J. & L. Orchids sub E. Hágsater 11388*, AMO x3! (Illustration voucher and spirit) Sources of the Marañon, V 1853, *Warscewicz 3*, AMES! **Amazonas:** near Lake Pomacochas, 2100 m, 17 IX 1966, *Bennett Jr. 1883*, UC x2! 8 miles SW of Village of Pomocochas, 7850 ft, 1 IV 1944, *Hodge 6144*, AMES! US! Laguna Pomacocha, km 335 E of Olmos on the road to La Rioja, 2360 m, 26 I 1964, *Hutchison 3811*, SEL! UC! Andes du Pérou, (Chacapoyas), XII 1846, *Mathews s.n.*, G! Bongara, 2300 m, 31 VIII 1983, *Smith 4888*, MO! USM! Bongara, Along roadside 20 km NE of Pedro Ruiz on road to Pomacochas, 2750 m, 18 II 1978, *Wasshausen 928*, K-L! US x2! USM! 2-4 km west-southwest (245°) of Pomacocha, 2200-2400 m, 16 VI 1962, *Wurdack 863*, US! USM! Bongara, Shilla, ca. 1900 m, 9 V 1981, *Young 441*, MO! **Cajamarca:** Tabaconas, *Wallis 125*, W-R! Lake Pomacocha on the road to Rioja, 2000 m, 8 IV 1964, *Hutchison 6811*, UC!
OTHER RECORDS: Without locality data, photo received 26 VIII 2006, *David Banks s.n.*, digital photo, AMO! **ECUADOR: Zamora-Chinchipe:** Yangana Valladolid, 2100 m, 24 VII 1985, *Dodson 16056A*, MO! camino Loja-Zamora, hort. vivero alto, Cuenca, 2600 m, *M. Portilla, Ecuagenera sub E. Hágsater 13889*, spirit and digital photo, AMO! **PERU: Cajamarca:** San Ignacio, Tabaconas district, Tamborapa, 1800 m, 12 VI 1996, *Bennett 7534*, note and xerox of illustration, USM

EPIDENDRUM CARDIOPHORUM Schltr. Plate 1311

OTHER SPECIMENS: MEXICO: San Luis Potosí: Tamazuchale, 2 VII 1950, *Dressler 1176*, AMES! US! Río Huichihuayan, III 1983, *Hágsater 7205*, AMO! Tamazuchale, 2 VII 1940, *Hitchcock 6911*, DH! SEL! UC! Río Huichihuayan, 100 m, 31 XII 1981, *Judwiewicz 3022*, XAL! Sin localidad, 19 VII 1963, *MacGregor 962*, US! Cañon de Cocomán, 150-200 m, 22 VII 1891, *Maury 6943*, AMES! Micos, 500 m, 29 VII 1935, *Oestlund 4827*, AMES! US! SE of Tamasopo, 400-500 m 23 XI 1935, *Oestlund 5090*, AMES! US! Sierra de Santa María, ca. 1000 m, 11 VIII 1936, *Oestlund 5288*, AMES! Sin localidad, 200 m, 22 VI 1936, *Oestlund 5938*, AMES! F! SEL! US! Espinazo del Diablo, 800 m, 14 VIII 1937, *Oestlund 6927*, AMES! MO! Tamasopo, 450 m, 28 VIII 1937, *Oestlund 6934*, US! Rascón, 1 VI 1922, *Palmer 681*, NY! Ibid., 19 VI 1905, *Palmer 681*, AMES! US! Rascón., 21 VI 1892, *Pringle 5302*, AMES! ENCB! MEXU! US! Tamán, 400 m, 28 VI 1959, *Rzedowski 10991*, ENCB! Tamazuchale, 100 m, 17 IX 1966, *Rzedowski 23155*, ENCB! MICH! **Queretaro**: Tanchanaquito, 250-300 m, 27 VII 1996, *Carranza 4920*, AMO! Tangojo, 16 IV 1988, *Fernández 4245*, AMO! Tanchanaquito, 500 m, 15 VII 1993, *López 680*, AMO! Agua Zarca, río Moctezuma, 11 I 1990, *Rubio 1444*, AMO! **Puebla**: Mesa de San Diego, 1 I 1950, *Bravo 104*, ENCB! MEXU! Tlaxcaltongo, 365 m, col. 13 X 1995, pren. 22 VII 1996, *Ceja 194*, AMO x3! Tlaxipehuatl, 380 m, *Espejo 4044,* AMO! Tangojo, 400 m, *Fernández 4245*, ENCB! Caxapa, 8 X 1943, *Vera-Santos 2591*, MICH! **Guerrero**: Las Delicias, 740 m, 9 VIII 1985, *De Graw 14*, AMO! FCME! Las Delicias, 4 VIII 1985, *De Graw 17*, AMO! FCME! km 30 Atoyac-El Gallo, 30 XII 1976, *Hágsater 4723*, AMO x2! Tlapaya, 1 I 1865, *Hahn 66*, P! Plan del Carrizo, 750 m, 14 X 1939, *Hinton 14641*, AMES! US! San Vicente, 1000 m, 12 I 1933, *Oestlund 2006*, AMES! F! US! **Oaxaca**: Matías Romero-Sarabia, 127 m, 21 IV 1987, *Aguirre 1170*, AMO x2! Presa Miguel Alemán, 110 m, 24 X 1987, *Espejo 2955,* AMO! Km 30 Atoyac-El Gallo, col. 30 XII 1976, cutl. 20 IX 1981, *Hágsater 4723* AMO x2! Jalapa de Díaz-Ayutla, 19 XII 1981, *Hágsater 5441*, AMO! Juxtlahuaca, 28 XI 1984, *Hágsater 6854*, AMO! BR! C! K-L! LL! XAL! San Juan Guichicovil, 120 m, col. 17 IV 1987, cult. 26 X 1997, *Hágsater 11969*, AMO! Santa María Chimalapa, 300 m, 1 III 1985, *Hernández 941*, AMO! MEXU! Santa María Chimalapa, 300 m, 22 VII 1985, *Hernández 1352*, AMO! Chiltepec, ca. 20 m, 1 VII 1940, *Martínez-Calderón 112*, LL! MEXU! SEL! UC! Mogote, 1000 m, 14 II 1935, *Oestlund 4583*, AMES! Arroyo Tomate, 1 X 1969, *Rensch IE-190-108*, MEXU! Santa María Chimalapa, ca. 350 m, *Rocha 305*, AMO! Ayozintepec, 21 II 1988, *Torres 11511*, MEXU! Matias Romero, 16 VII 1958, *Williams 68*, MICH! **Veracruz**: Ejido La Esperanza, 750 m, 21 VI 1985, *Acevedo 270*, XAL!

Orizaba, Barrio Nuevo, *Beaman 3081*, P x3! Zapopan, 530 m, 30 VI 1972, *Beaman 6323*, MEXU x2! Parque de la Flora y Fauna Silvestre Tropical, 7 VIII 1993, *Carmona-Díaz 68*, AMO! Barranca de Metlac, 900 m, 5 V 1992, *Castillo 119*, CORU! San José de Gracía, 28 VI 1977, *Croat 39626,* CAS! MO! Parque de la Flora y Fauna Silvestre Tropical, 7 VIII 1993, *Carmona 68*, AMO! Caña de las Perdidas, 27 XI 1967, *Chavelas s.n.*, AMO! CAS! ENCB! Playa Vicente, 3 X 1971, *Chavelas ES-4186*, MEXU! Cedillo-Río Alegre, 18 I 1975, *Dorantes 3907*, MEXU! QCA! XAL! Laguna Encantada, 14 VIII 1953, *Dressler 81*, AMES! Zacuapam, 3500 ft, *Galeotti 5163* W-R x2! Jesús Carranza, 25 I 1943, *Gilly 56*, MICH! NY! San Fernando, 650 m, 14 V 1970, *Gómez-Pompa 4863*, MEXU! Tlapacoyan, I 1965, *Hahn s.n.*, P! Km 19 Huetemalco-Ayatoxco, 6 VI 1983, *Hágsater 6565*, AMO x3! Atoyac, 550-800 m, 11 VII 1992, *Hietz 401*, XAL! Chilpanapa, 650 m, 17 V 1990, *Huerta 27*, AMO! CORU! Estación de Biología Tropical Los Tuxtlas, 200 m, 23 VI 1984, *Ibarra 1763*, AMO! MEXU! Metlac, 800 m, 5 V 1992, *López 119*, AMO! CORU! San Juan Evangelista, 20 VIII 1967, *Martínez-Calderón 1495*, CAS! Cerro Punta Coscomatepec, *Matuda 1509* NY! Fortín de Las Flores, 850 m, 20 VII 1967, *Nevling 327*, MEXU! Fortín, 15 V 1961, *Newcomb 134*, AMES! UC! Zacuapan, 900-1000 m, 4 VIII 1937, *Oestlund 2994*, AMES! MO! US! Córdoba, 820 m, *Oestlund 3341* AMES! MO! Ibid., 820, 27 IX 1934, *Oestlund 4069* AMES! Tezonapa, 300 m, 22 XII 1934, *Oestlund 4175*, F! Ibid., AMES! F! MO! US! Ibid., *Oestlund 4185*, AMES! F! US! Río Tonalá, 50 m, 27 V 1973, *Orozco 122*, MEXU! XAL! Río Tonalá, 50 m, 28 IX 1973, *Orozco 297*, MEXU! UAMIZ! XAL! Rio Tonalá, 50 m, 26 X 1973, *Orozco 314*, MEXU! Córdoba, 727 m, 1 V 1987, *Oseguera 51*, CORU! Cordoba, 4 VIII 1947, *Paxon 17M657*, LL! Fortín, 4 VIII 1947, *Paxon 17M679*, AMES! LL! MEXU! MICH! Zacuapan, 1 V 1919, *Purpus 8290*, AMES! MO! NY! UC! US! El Mirador, 1 VIII 1939, *Purpus 16295*, AMES! Fortín, *Renz 10237*, RENZ! Motzorongo, 500 m, 3 III 1986, *Robles 479*, XAL! Cordoba, 4 VIII 1947, *Rowell 17M657*, AMES! MEXU! MICH! Amatlán, 750 m, 11 X 1964, *Rzedowski 18901*, ENCB! Laguna Escondida, 16 VIII 1985, *Sinaca 196*, AMO! MEXU x2! Ibid., 17 VIII 1985, *Sinaca 200*, AMO! MEXU x7! Ibid., 10 VI 1986, *Sinaca 789,* AMO! MEXU x4! Xalapa, *Smith 1867*, NY x2! Puerta Nueva, 370 m, 10 V 1965, *Sousa 2343*, MEXU x2! Santiago Tuxtla, 440 m, 10 V 1965, *Sousa 2356*, AMES! AMO x2! MEXU x2! XAL! Santiago Tuxtla, 280 m, 29 VIII 1967, *Sousa 3187*, MEXU! El Encinal, 210 m, 30 VIII 1967, *Sousa 3213*, AMO! MEXU! La Trinidad Chica, 890 m, 4 VI 1994, *Tejeda 2*, CORU! Camp. Hnos. Cedillo, 150 m, 7 III 1974, *Valdivia 24*, MEXU! XAL! Camp. Hnos. Cedillo, 150 m, 7 III 1974, *Valdivia 36*, MEXU! XAL x3! UC! Ibíd., *Valdivia 38*, MEXU! XAL x2! Camp. Hnos. Cedillo, 152 m, 12 III 1974, *Valdivia 79*, XAL! Camp. Hnos. Cedillo, 14 III 1974, *Valdivia 106*, XAL! Camp. Hnos. Cedillo, 150 m, 30 V 1974, *Valdivia 144*, MEXU! XAL x2! Camp. Hnos. Cedillo, 156 m, 21 VI 1974, *Valdivia 893*, XAL x2! Camp. Hnos. Cedillo, 156 m, 22 VII 1974, *Valdivia 1018*, XAL! Camp. Hnos. Cedillo, 156 m, 31 VII 1974, *Valdivia 1214*, XAL! Camp. Hnos. Cedillo, 160 m, 28 I 1975, *Valdivia 1405*, XAL! La Laguna, 160 m, 10 VIII 1974, *Valdivia 1411*, MEXU, XAL x2 Álvaro Obregón, *Valdivia 1670*, XAL x2! Pancho Villa, 155 m, 18 I 1975, *Valdivia 1752*, XAL x2 Río Alegre, 120 m, 26 I 1975, *Valdivia 1878*, ILL! MEXU! MO! XAL x2! Camp. Hnos. Cedillo, 160 m, 28 I 1975, *Valdivia 1905*, XAL! Rio Alegre, 150 m, 30 V 1974, *Vázquez V-713*, MEXU! San Bartolo, 850 m, 22 VI 1979, *Ventura 16251*, AMO! ENCB! MEXU! XAL! San Rafael, 10 I 1980, *Ventura 16712*, AMO! ENCB! Hule, El Palmar, 5 VIII 1943, *Vera 2288* F! LL! MEXU! MICH! US! Córdoba, Paxon, *Webster 17M657*, MEXU! Fotín, *Webster 17 M67*, AMES! LL! MEXU! MICH! **Chiapas**: Poblado Nuevo Guerrero, 8 III 2002, *Aguilar 79*, MEXU! Nuevo Guerrero, 27 V 2002, *Aguilar 1140*, MEXU! Crucero San Javier, 31 VIII 2002, *Aguilar 2404*, MEXU! Crucero San Javier, *Aguilar 2521*, MEXU! Crucero San Javier, 29 I 2003, *Aguilar 5317*, MEXUx 2! Nuevo Guerrero, 6 V 2002, *Álvarez 962*, MEXU! Bonampak, 10 II 2003, *Álvarez 3697*, MEXU! Camp. "El Burro", 12 IV 2003, *Álvarez 6263*, MEXU! 25 km S of Palenque, 13 XII 1986, *Breedlove 6632*, CAS! Ocozocoautla-Mal Paso, 800 m, 27 IX 1973, *Breedlove 21068*, CAS! Palenque, 300 m, 27 VII 1972, *Breedlove 26594*, CAS! Ocozocoautla, 600 m, 27 VIII 1972, *Breedlove 27502*, CAS! Ocozocoautla-Mal Paso, 800 m, 27 IX 1972, *Breedlove 28139*, CAS! Ocozocoautla-Mal Paso, 700 m, 8 X 1974, *Breedlove 38323*, CAS! Chancalá-Bonampak, 300 m, 5 I 1981, *Breedlove 49179*, CAS! Near El Real, 760 m, 24 XII 1981, *Breedlove 56408*, CAS! Santo Domingo to Bonampak, 455 m, 25 I 1982, *Breedlove 57885*, CAS! Toniná, 11 XII 1986, *Breedlove 66297* CAS! Angel Albino Corzo, 9 V 1988, *Breedlove 67365*, CAS! Col. Gabriel Esquinca, *Breedlove 70026*, CAS! Palenque, 8 VII 1983, *Cabrera 5037*, MEXU! Mexicana a Independencia, 9 V 2988, *Cachón 61*, AMO! Velasco Suárez, 8 X 1976, *Calzada 2724*, ENCB! XAL! Finca Prusia, 19 V 1982, *Calzada 9213*, UC! QCA! Finca Custepec, *Castillo 1365*, AMO! Finca Prusia, *Castillo 1484*, AMO! Ixhuatán, 4 VIII 1967, *Clarke 70*, CAS! Laguna Ocotal Grande, ca. 950 m, 20 VII 1954, *Dressler 1479*, AMES! MEXU! US! Sierra de la Cojolita, 400, 30 IV 1992, *Góonzalez-Espinosa* 1779 AMO! Río Pichucalco, 15 IX 1944, *Gilly 191*, AMES! F! LL! MEXU! MICH! Ejido Nueva Palestina, 510 m, 27 II 1996, *Luna-Gomez 103*, CAS! CICY! Laguna Ocotalito, 950 m, 16 VI 1986, *Martínez 2638*, AMO x2! Crucero Corozal, 220 m, 7 XII 1984, *Martínez 9286* AMO! WIS! Flor de Cacao, 120 m, 9 XII 1984, *Mártínez 9386*, WIS! Ejido Benemérito de las Américas, 120 m, 18 II 1985, *Martínez 10639* AMO! Crucero Corozal, 170 m, 14 VI 1985, *Martínez 12468*, CICY! Estación Chajul, 15 VII 1992, *Martínez 24941*, AMO! Siltepec, 1500 m, 9 VII 1941, *Matuda 4375*, LL! MEXU! Cruce rios Negro y Venta, 2 VI 1992, *Ochoa-Ganona 3912* AMO! CAS! CICY! Lake E of Comitán, 1350 m, 1 X 1937, *Oestlund 6684*, AMES! F! MEXU! US! Yajalón, 800 m,19 V 1982, *Shilom 4311*, AMO! IBUG! MEXU! WIS! Laguna Ocotalito, 950 m, 16 VI 1986, *Soto 2638* AMO! AMES! F! Nuevo Guerrero, 4 VIII 1982, *Soto 6800* AMO! Ibid. *Soto 6801* AMO! Monte Líbano, 920 m, 7 VIII 1992, *Soto 6823*, AMO! Pic Pac hacia la reserva del Ocote, 400 m, 14 VI!983, *Vazquez 1058*, XAL! **Tabasco**: Puyacatenango, 18 XI 1978, *Cowan 1704*, CAS! CICY! Huimanguillo, 10 X 1980, *Cowan 3260* CAS! ENCB! MEXU! Balancan, 9 V 1939, *Matuda 3114*, AMES! MICH! La Palma Balancan, 6 VI 1939, *Matuda 3317*, AMES! K-L! MEXU! MICH! SEL! Arroyo del Azufre, 24 VII 1990, *Sánchez 836*, CORU! Sierra el Madrigal, 11 XII 1991, *Santana 357*, AMO! Balancan, 6 XII 1975, *Valdivia 2058*, MO! XAL! Cuauhtemoc, 300 m, 8 XII 1975, *Valdivia 2093*, MEXU! XAL! Puyacatengo, 26 IX 1983, *Ventura 20654*, AMO! **Campeche**: Calakmul, Plan de San Luis, 16 VII 2002, *Álvarez 1715*, MEXU! Xpujil, 22 VIII 2002, *Álvarez 1049659*, MEXU! Ejido La Moza, 31 I 2003, *Álvarez 3491*, MEXU! Chichonal, 2 VII 2003, *Álvarez 5940*, MEXU! Becan, 2 II 1981, *Andrews 3*, CICY! Hormiguero, 2 VI 1981, *Andrews JMA-28*, CICY! Xpujil, 21 II 2002, *Calónico 211864*, MEXU! Dzibaichén, 13 III 2002, *Martínez 35453*, MEXU! Becan. Hopelchen, 3 VI 1988, *Flores-Castorena 744*, AMO! Chicanná, 20 IX 1981, *Hágsater 2307*, AMO! XAL! Xpujil, 22 VIII 2002, *Martínez 1998*, MEXU! Monhuas, 100 m, 5 VII 1991, *Ortega 1565*, CICY! Hopelchén, 12 V 1980, *Sanders 9677*, CICY! "Ing. Eduardo Sangri Serrano", 5 VIII 1996, *Sarmiento 9*, AMO! Calakmul, 100 m, 8 VII 1988, *Torres 521*, CICY! Dzibalchén, 14 III 1996, *Trejo 597*, CICY! Hopelchén, Calakmul, 100 m, 17 XII 1987, *Ucan 5322*, CICY! ejido Pach Nits, 100 m, 24 I 1990, *Ucan 5604*, CICY! Corihuas, 100 m, 9 XII 1990, *Ucan 6554*, CICY! Ejido Beltran, 100 m19 XI 1990, *Ucan 6483*, CICY! **Quintana Roo**: Graciano Sánchez, 0-15 m, 5 X 1996, *Carnevali 4291*, CICY! Ejido Caobas, 28 I 1999, *Sánchez 603* AMO! La Unión, 9 V 1981, *Ucan 942* CICY! XAL! **BELIZE: Belize:** Northern River, 10 VI 1934, *Gentle 1278*, AMES! Ibid., 26 VII 1934, *Gentle*

1278, AMES! Ibid., 26 VII 1934, *Gentle 1339*, AMES x2! MO! Belize River, 13 II 1938, *Gentle 2178*, F! MICH! Butcher Landing, 13 VI 1933, *Lundell 3895*, AMES! MICH! US! Big Fall, 21 III 1933, *Lundell 3994*, AMES! Belize River, Maskall mahogany forest, 29 VIII 1936, *O´Neill 8346*, AMES! MICH! WIS! **Cayo:** Sibum River, 5 X 1934, *Gentle 1482*, K-L! MO! WIS! US! Siburn River, 5 XII 1934, *Gentle 1492*, AMES! Humming Bird Highway, 3 IX 1955, *Gentle 8853*, F! LL! Humming Bird Highaway, 9 VII 1956, *Gentle 9163*, F! LL! S! US! Belize-Cayo road, 17 III 1958, *Gentle 9679*, LL! Cayo, 11 V 1934, *Hermam 13903*, MICH! Mt. Pine Ridge, Blancaneaux, 600 m, 24 I 1974, *Liesner 1609*, MO! Benque Viejo, 1 VI 1936, *Lundell 6139*, AMES! MICH! Sin localidad, 1 VII 1896, *Maloney s.n.*, K-L! San Ignacio, 2 XII 1968, *Poroctor 29597*, BM! Roaring Creek Town, 27 VII 1971, *Wunderlin 344*, MO! **Stann Creek:** Mt. Coco Ridge, 30 VI 1941, *Gentle 3560* AMES! MICH! MO! U! Middlesex, 28 II 1990, *Hágsater 10425* AMO! **Toledo:** Temash River; 0-50 ft, *Dwyer 12864*, MO! Río Grande, 25 V 1944, *Gentle 4644*, LL! MICH! Temash River, 5 VI 1944, *Gentle 4655* MICH! LL! USJ! Cohune ridge, Crique Queva, 8 VIII 1946, Gentle 6027, LL! Edwards Road beyond Columbia, 18 X 1947, *Gentle 6299*, LL! Edwards Road beyond Columbia, 28 I 1948, *Gentle 6379*, F! LL! S! San Antonio-Punta Gorda Road, 28 02 1949, *Gentle 6698*, LL! Joe Taylor Creek, 29 X 1951, *Gentle 7496*, LL! Columbia Forestry Station, 12 VI 1973, *Gentry 8118*, MO! **GUATEMALA: Alta Verapaz:** Río Sebol, 10 V 1964, *Contreras 4651*, LL! Sebol, Río Sebol, 1 VIII 1964, *Contreras 5379*, LL! Panjache, 10 IV 1941, *Standley 91885*, AMES! Tucuru, 1 VI 2012, *Tuerkheim 2434*, AMES! US! **Huehuetenango:** Ixcan, 23 VII 1942, *Steyermark 49293*, AMES! F! **Izabal:** Puerto Barrios, 26 V 1909, *Deam 6021*, AMESx3! BM! E! F! MICH! MO! NY! UC! US! W-R! Puerto Barrios, 25 V 1909, *Deam 6022*, MICH! Jocolo, 21 III 1920, *Johnson 1281* AMES! Ensenada de Los Lagartos, 16 VII 1988, *Martínez 22820*, MEXU! El Estor, 28 VIII 1989, *Martínez 23295*, MO! Zapotillo, Lake Izabal, 21 VI 1966, *Snedaker 123*, AMES! F! Quirigua, 15 V 1922, *Standley 24474*, AMES! NY! US! Lago Izabal, 17 IV 1940, *Steyermark 39626*, F! Biotopo de Chocon Machaca, 28 VII 1988, *Tenorio 14925*, CICY! **Peten:** Poptum, 6 X 1970, *Harmon 2529*, AMES! F! MO! Río de la Pasión, Sayaxche, 19 VI 1971, *Harmon 5804*, MEXU! Tikal, 10 XI 1959, *Contreras 372*, LL! Ibid., Bajo de Santa Fe, 4 II 1960, *Contreras 599*, LL! Ibid., Tikal, 9 VI 1960, *Contreras 1054*, LL! S! Ibid., 28 VI 1960, *Contreras 1187*, G! LL! MICH! S! US! Ibid., Tikal, 29 VI 1960, *Contreras 1199*, LL! Ibid., 4 VII 1960, *Contreras 1211*, F! LL! S! Ibid., 21 II 1961, *Contreras 1985*, LL! Dolores, 20 V 1961, *Contreras 2356*, LL! Dolores, 19 VI 1961, *Contreras 2481*, LL! Dolores, 29 IX 1961, *Contreras 3004*, LL! Lake Yaxha, 18 VI 1973, *Croat 24674*, MO! Tikal, 19 VI 1973, *Croat 24742*, MO! Río de La Pasión, 19 VI 1971, *Harmon 5804*, ENCB! La Libertad, 31V 1933, *Lundell 3526*, AMES! MICH! S! Tikal, 29 I 1959, *Lundell 15437*, LL! Ibid., 4 VI 1959, *Lundell 16176*, LL! Ibid., 09 VI 1959, *Lundell 16084*, LL! Ibid., 4 VII 1959, *Lundell 16176*, LL! About 2 km east of village, 13 VII 1959, *Lundell 16418* LL! Tikal, 28 X 1969, *Renz 10442*, RENZ! Tikal, 24 VI 1971, *Rodríguez 1850*, F! Cerro Ceibal, 30 IV 1942, *Steyermark 46094*, AMES! F! Tikal, 11 VII 1969, *Tun-Ortíz 170*, BM! F! MO! NY! Tikal, 22 XI 1969, *Tun-Ortiz 431*, BM! F! MO! NY! Tikal, 24 VI 1971, *Tun-Ortíz 1850*, BM! MO! Dolores, 20 XI 1971, *Tun-Ortíz 2116*, F! Lake Yaxha, 3 VII 1973, *Vanderveen 676*, MO! **HONDURAS: Atlántida:** La Fragua swamp, 7 III 1923, *Ames s.n.*, AMES x2! Guaymas, 17 III 1923, *Ames s.n.*, AMES! Jutiapa, 29 VII 1951, *Howard 530*, AMES! Lancetilla Valley, 20-600 m, 6 XII 2027, *Standley 54623*, AMES! F! US! Lancetilla, 26 IV 1947, *L. O. Williams 13069*, AMES! F! Lancetilla, 200 ft, 23 VII 1934, *Yuncker 4721*, AMES! F! MICH! **Colón:** Barranco, 1 IV 1923, *Spindenm s.n.*, AMES! **Comayagua:** Siguantepeque, 19 VI 1970, *Bartley 40879*, AMES! Coyocutena, San Luis, 4000 ft, 24 V 1923, *Edwards 167*, AMES! Malcotal-Minas de Oro, 4200 ft, 7 VII 1932, *Edwards 198*, AMES x2! Pito Solo, Lake Yojoa, 2000 ft, 7 VIII 1932, *Edwards 217*, AMES! San Luis, 2500 ft, 9 V 1932, *Edwards 418*, AMES! La Libertad, 27 VI 1933, *Edwards 439*, AMES! Pitosolo, 640 m, 14 VIII 1971, *Molina 26187*, F! Siguantepeque, 1100 m, 5 IV 1945, *Rodríguez 2659*, AMES! F! **Copán:** Monte Grueso, 8 V 1970, *Hernández 5205*, AMES! Beetween Copán (Honduras) and Camotan (Guatemala), ca. 2000 m, 1 V 1929, *Spinden s.n.*, AMES! **Francisco Morazán:** Quebrada de los Miados a 4 km de Guaimaca, 14 VI 1950, *Molina 3092*, US! Lancetilla, 23 VII 1934, *Yunker 4721*, MO! Guaimaca, 800 m, 4 VI 1950, *Molina 3092*, BM! **Intibucá:** Yshse, 1500 m, 12 IV 1956, *Molina 6257*, F! Santa Bárbara: Route San Pedro Jula [Sula]-Copei, 11 X 1969, *Renz 10418*, RENZx4! Yoro: Near Progreso, 10 V 1923, *Erskine s.n.*, AMESx4! Sin localidad: 31 V 1909, *Deam 6072*, F! Payatown, 1 IV 1923, *Spinden s.n.*, AMES! **NICARAGUA: Atlantico Norte:** [Zelaya] Near Siuna, 200-500 m, 16 III 1971, *Atwood 4858*, AMES! **Matagalpa:** Yasica River, 400 m, 10 III 1967, *Molina 20489*, AMES! BM! F! G! S! US! Zelaya, Amparo, 130-160 m, IV 1983, *Ortiz 1276* AMO! **COSTA RICA: Cartago:** Paraíso, Cóncavas, 1 V 1995, *Blanco 1499*, USJ! Instituto Turrialba, 6 V 1953, *Córdoba 361*, USJ! CATIE, Turrialba, 25 IV 1976, *Gómez-Laurito 1526*, USJ! Florencia, cult. 20 III 1982, *Hágsater s.n.*, AMO! C! USJ! Valley of Rio Reventazón, CATIE, 500-600 m, 21 VII 1949, *Holm 441*, MO! **Heredia**: La Selva, 1 X 1985, *Atwood 85-79*, USJ! La Selva, 6 IV 1981, *Folsom 9664*, MO! Atirro-Oriente, 5 V 1956, *Williams 4690*, USJ! **Limón:** Reserva Biológica Valle de la Estrella, 18 04 1991, *Carballo 395*, USJ! Refugio Barra del Colorado, 12 m, 21 IV 1990, *Grayum 9816*, MO! **PANAMÁ: Bocas del Toro**: Chiriquicito, ca. 1000 ft., 7 VI 1967, *Lewis 2004*, AMES! MO! UC! US! Chiriquí Lagoon, 17 X 1940, *Wedel 1206*, MO! US!

OTHER RECORDS: MEXICO: Without locality, *Pérez s.n.* Illustration voucher AMO! **COSTA RICA:** Hort., 1984, *R. L. Rodríguez 212*, watercolor, xerox AMO!

EPIDENDRUM CAROLII Schltr. Plate 1312

OTHER SPECIMENS: Botanic Gardens Kew, without collector data, *191*, K-L! Ibid. 7 I 1884, K-L! **MÉXICO: Jalisco:** Without locality data, pressed cult. 28 V 1983, *González Tamayo sub Hágsater 4292*, AMO! Autlán de Navarro, Puerto de Los Mazos, 3 X 1987, *Salazar 3554*, AMO! **Guerrero:** La Yerbabuena-Cruz de Ocote, 19 VII 1982, *Contreras 1243*, AMO! Arriba de Hueycatenango, pressed cult. 4 VI 1976, *Hágsater s.n.,* MEXU! Hueycatenango, *Hágsater 5309*, AMO! FCME! G! US! **Oaxaca:** West of San Juan Lachao, 6000 ft, 30 I 1974, *McCullough s.n.*, MEXU! West of Pluma Hidalgo, near Finca "Copalita", ca. 1200 m, 14 VI 1936, *Nagel 5305*, AMES! Colonia Rodolfo Figueroa, Baúl area, 4500 ft, 22 IV 1967, *Pollard s.n.*, MEXU! km 174-176 Puerto Econdido Hwy., 6 XII 1968, *Pollard 1C-190-20*, MEXU! **Chiapas:** El Sumidero, col. XI 1968, pressed cult. 15 IX 1973, *Durham 35545*, CAS! base del Cerro Baúl, 1420 m, col. 21 III 1997, pressed cult. 1 IX 2001, *Soto 8176*, AMO! **EL SALVADOR:** Cerro Verde, 1900 m, 6 VIII 1969, *Hamer/Pank 263*, SEL! **NICARAGUA: Matagalpa:** Cerro "Santa María" 3 km al SE de Esquipulas, ca. 1200 m, 25 I 1985, *Moreno 25365*, MO! **COSTA RICA:** Without locality data, 4 XII 1927, *Lankester s.n.,* K-L! Univ. Calif. Bot. Gard. *Horich s.n.*, MO 1785402! La Palma, 2 XI 1959, 1450-1550 m, *Horich 59-39-3*, MO! **Alajuela:** Zarcero, 5500 ft, 16 X 1937, *Smith 392*, F! Ibid. 5000 ft, *Smith 508*, F! Ibid. 1900 m, 14 IX 1938, *Smith 1186*, AMES! **Heredia:** Yerba Buena, NE of San Isidro, 2000 m, 11 II 1926, *Standley 49180*, AMES! US! Bella Vista de Zarcero, 1900 m, 3 X 1938, *Smith 1238*, AMES! K-L! SEL! **Cartago:** slopes of Irazú, 6000 ft, *Endres s.n.*, W-R 5551! Las Cóncavas, 4200 ft, 2 IX 1925, *Lankester 1086*, AMES! Cartago, 1500 m, 19 IV 1906, *Maxon 59,* NY! Cerro de la Carpintera, 1500-1850 m, II 1924, *Standley 35472*, AMES! US! Dulce Nombre, 1400 m, 27 II 1924, *Standley 35794*, AMES! US! Río Reventado, 1460-1650 m, 26 II 1926, *Standley 49505*, AMES! US! Ibid. *Standley 49523*, AMES! US! La Carpintera, 5700 ft, 3 IV 1928, *Stork 1398*, MO! **[San José]:** Cultivado en San Jose, 27 VIII 1936, *Brade 364*, AMES! Rancho Redondo Goicoechea, 13 X 1983, *Hágsater 6733*, AMO (x2)! Cerros de Aserrí, Tarbaca, 1800-1900 m, 23 XI 1984, *Hágsater 6987*, AMO! San José, 19 XII 1960, *Horich s.n.*, UC! Ibid. 1600-1900 m, 12 II 1924, *Standley 34114*, AMES! US! Santa María de Dota, 1500-1800 m, 25 XII 1925,

Standley 43401, AMES! Ibid. 26 XII 1925, *Standley 43486*, AMES! US! **PANAMÁ: Coclé:** Coronado [cultivated?], 4 II 1945, *Roviralta 20*, F!
OTHER RECORDS: MÉXICO: Michoacán: Coalcomán, XI 1986, *Meunier s.n.*, photo and flower card, AMO! **Guerrero:** Hueycatenango, *Hágsater s.n*, illustration, AMO! **Oaxaca:** Baul area, ca. 4400 ft, X 1965, *Galley s.n.*, photos and Pollard notes, AMO! 1 km W of km 180, Pto. Escondido Rd, 2050 m, 5 V 1976, *Greenwood s.n.*, slide, AMO! km 181, Pto. Escondido Rd., 6000 ft, 30 I 1974, *McCullough s.n.*, slide, AMO! km 184.7 Escondido Rd, 28 XI 1968, *McCullough 1424*, slide, AMO! km 184, Ibid. 5650 ft, 31 X 1963, *Pollard s.n*., flower card, photos and Pollard notes, AMO! **Chiapas:** 6 mi from Berriozabal on El Suspiro Rd., 3650 ft, 4 I 1972, *Pollard 1D*, note, AMO! km 14 Mal Paso Rd., 3300 ft, 4 I 1972, *Pollard 1E*, note, AMO! **GUATEMALA: Chiquimula:** Near Concepción de las Minas, *Lewis 130*, note, (Ames & Correll, 1952). **COSTA RICA: Alajuela:** San Jerónimo, *Hágsater 6650*, spirit and flower card, AMO! (Illustration voucher). **EL SALVADOR:** Cerro Verde, 1900 m, III 1970, *Hamer 77*, illustration, Las Orquídeas de El Salvador, 1: 180-181. [only the plant habit and flowers, the floral segments correspond to *E. laucheanum* Rolfe ex Bonhof, with two specimens at AMES, with different localities and dates, all with the same collector and number.]

EPIDENDRUM CHLOROPS Rchb.f. Plate 1316

OTHER SPECIMENS: MEXICO: Without locality, *Sessé, Mociño, Castillo 4320*, BM! F! MA! **Sinaloa:** Rosario-Santa Lucia, 350 m, 11 XII 1935, *Nagel 5150*, AMES! US! **Nayarit:** Near La Libertad, SW of Tepic, 3000 ft, 1 II 1978, *Bashor 1883*, AMO! East of Putla, 5000 ft, 10 IV 1978, *Bashor 1935-A*, AMO! ca. 10 mi W of Tepic, 26 XII 1949, *Dressler 1015*, US! 10 mi. SE of Ahuacatlán, on the road to Barranca del Oro and Amatlán, 1100-1300 m, 17 XI 1959, *McVaugh 761*, CAS! MICH! **Jalisco:** Autlán, 1600 m, 1 III 1973, *Rosillo de Velasco 131*, AMO! Ibid. *138*, AMO! S of Pihuamo, 17 II 1966, *Thompson s.n.*, UC! Ibid. 31 I 1967, *Thompson s.n.*, AMES! UC x3! Mine Road to Cuale, *Warford 429*, AMO! (Flowers in spirit). **Colima:** Without locality, 19 II 1978, *Hágsater 4341*, AMO! MEXU! Ibid. 18 III 1985, AMO x4! Ibid. 25 III 1985, AMO x4! ENCB! Ibid. 7 V 1985, AMO x3! Ibid. 23 XI 1985, AMO! Ibid. 12 II 1979, AMO! K-L! SEL! Near Hacienda San Antonio, 800-900 m, 28 I 1936, *Oestlund 5260*, AMES! US! **Michoacán:** Coalcomán, 1000 m, 4 IV 1939, *Hinton 13648*, AMES! US! **Michoacan-Guerrero:** Sierra Madre, 500 m, 21 II 1899, *Langlassé 916*, G x2! **Guerrero:** Without locality, 5 III 1982, *Hágsater s.n.*, AMO x2! Ibid. 5 III 1982, *Hágsater 4479*, AMO! Above Mazatlán, 27 XII 1947, *Correll 14390*, LL! Near Omiltemi, ca. 1100 m, 31 XII 1935, *González 946*, SEL! El Rincón de La Vía, ca. 1000 m, 1 IV 1971, *Hágsater 1609*, AMO! Atoyac-El Gallo, arriba de Paraiso, 30 XII 1976, *Hágsater 4761*, AMO x4! Puerto Gallo, 10 km behind village, 14 VI 1985, *Hágsater 5401*, AMO x11! Petaquillas, 1 XII 1978, *Hágsater 5732*, AMO x2! Acahuizotla, 28 II 1991, *Hágsater 10952*, AMO! Acahuizotla, *Hágsater 10983*, AMO x2! (Illustration voucher, flowers in spirit) Vallecitos Montes de Oca, 28 I 1938, *Hinton 11769*, AMES! BM! G x2! NY! Near San Vicente N of Atoyac, 900 m, 9 I 1933, *Nagel 1961*, MO! Teotepec, 900-1000 m, 1 I 1933, *Nagel 2037*, AMES! Above Barranca de Joyeritos, 1700 m, 5 XII 1933, *Nagel 3275*, AMES! Near Atoyac, ca. 1000 m, 4 III 1935, *Nagel 4172*, AMES! S! Omiltemi, ca. 1700 m, 30 XII 1935, *Oestlund 946*, AMES! SEL! US! Near San Vicente N of Atoyac, 900 m, 19 I 1933 *Oestlund 1961*, AMES! BM! F! US! Mts above Barranca of Joveritos, 1700 m, 5 XII 1933, *Oestlund 3275*, MEXU! US! Near Chilpancingo, 12 III 1976, *Parker 326*, SEL! km 342 on Mexico Acapulco road, 26 II 1940, *Sawyer 81*, F! **Oaxaca:** E of Putla, 5000 ft, 1 III 1978, *Bashor 1935-A*, AMO! (flowers in spirit).
OTHER RECORDS: MEXICO: Jalisco: Autlán, *Jenny s.n.*, flowers in spirit AMO! Zapopan, 1700 m, *Rosillo de Velasco s.n.*, flowers in spirit AMO! Near the mine road to Cuale (south of Puerto Vallarta), 3300 ft, I 1988, *Warford 437*, Illustration AMO! **Colima:** Without locality, 21 III 1976, *Hágsater 4341*, Illustration AMO! **Oaxaca:** Without locality, 1 IX 1971, *Hágsater 2128*, flowers in spirit AMO!

EPIDENDRUM CILIARE L. Plate 1317

OTHER SPECIMENS: Without locality, *Barflelery s.n.*, FI! Ibid. I 1859, *Brentol s.n.*, W-R! Ibid. *Bunge s.n.*, P! Ibid. *Farris 61*, W-R! Ibid. *Gumaira 413*, BM! Ibid. *James 246*, W-R! Ibid. *Kramer s.n.*,W-R! Ibid. *Lejeune s.n.*, BR x2! Ibid. *Martin 207*, L x2! Ibid. *Miriuger s.n.*, W-R! Ibid. *Nyst s.n.*, BR! Ibid. *Oersted s.n.*, W-R! Ibid. *Pavon s.n.*, W-R! Ibid. *Regel 41*, W-R! Ibid. *Richard s.n.*, W-R! Ibid. *Richard 82*, W-R! Ibid. *Sorrotes s.n.*, G! Ibid. *Swartz s.n.*,W-R! Ibid. *Taylor 553*, NY! Ibid. *Thomas 2334*, CAS! Ibid. *Vaillanz 338*, P! Ibid. *Wagener 25359*, W-R! Ibid. *Swartz s.n.*,W-R! Antillas, *Breutet 6*, P! India Occ., *C.L.V. s.n.*, W-R x2! Serre du Rivage, II 1859, *Hort. s.n.*, G! Antillas, 11 V 1921, *Husnot s.n.*, P! **MEXICO:** Without locality, *Hágsater 268*, AMO x6! Mesa de San Diego, *Ghiesbreght 30*, W-R! Huasteca, *Ghiesbreght 79*, P! Nova Hispaniae, I 1787, *Sessé 4346*, MA! **Nayarit:** Jalcocotán, 15 VI 1961, *Dawson s.n.*, US! **Jalisco:** Puerto Vallarta, 11 VII 1978, *Ackerman 1229*, SEL! Los Tecomates, camino a Cuautitlán, 3 VII 1981, *Lott 465*, MEXU! Villa de la Purificación, 310 m, 3 VII 1981, *Lott 470*, MEXU! Talpa de Allende, 20 VII 1984, *Mally 20*, CAS! Vicinity of Lago Calabozo, 1400 m, 21 IX 1991, *Sanders 11587*, CAS! MO! Cabo Corrientes, 7 II 1977, *Warford s.n.*, SEL! **Colima:** Rancho El Jabalí, 1300 m, 25 VIII 1988, *Sanders 8296*, XAL! **Guerrero:** NE of Taxco, 5800 ft, 10 VII 1940, *Hitchcock 7065*, DH! US! NE of Taxco, 5800 ft, 10 VII 1940, *Hitchcock 7090*, DH! US! Sierra Colorada, 450 m, 20 VI 1932, *Oestlund 2707*, US! Acahuizotla, 1100 m, 1 III 1944, *Sawyer 927*, F! **Michoacan:** Morelia, 4000 ft, I 1840, *Galeotti 5215*, P! Ibid. *Galeotti 5216*, K-L! **Morelos:** Puente de Ixtla, El Zapote, 1650 m, 10 VII 1997, *García-Cruz 727*, AMO! (Illustration voucher). Ibid. press. 18 VII 1997, AMO! Ibid. press. 4 VIII 1997, AMO! UAMIZ! Pedregal of El Tezcal, 1850 m, 1 VIII 1949, *Sawyer 7631*, F! **Puebla:** Poza Rica-Xicotepec-Venustiano Carranza, 1000 ft, 1 IV 1981, *Hágsater 6562*, AMO x3! Cerro de Cuhuatepetl, 3100-3800 ft, 31 VIII 1944, *Santos 3343*, MICH! **Veracruz:** Without locality, *Hágsater 270*, AAU! AMO x9! USJ! S! Actopan, Cerro Manuel Díaz, 550 m, 9 X 1985, *Acosta 926*, XAL! Catemaco, Parque de la Flora y Fauna Silvestre Tropical, 515 m, 29 VI 1991, *Carmona 23*, AMO! Tebanca, 300 m, 21 XI 1987, *Espejo 450*, AMO! Amatlán de Los Reyes, La Patrona, 650 m, 7 IX 1990, *Huerta 51*, AMO! CORU! Cima El Vigía, 450 m, 2 XI 1984, *Ibarra 2093*, AMO x2! MEXU x11 Córdova, 17 VIII 1932, *Oestlund 1223*, S! San Andres Tuxtla, Laguna Escondida, ca. 200 m, 22 II 1985, *Salazar 532*, AMO! San Andres Tuxtla, Laguna Escondida, ca. 200 m, 27 XI 1985, *Salazar 1737*, BR! San Andrés Tuxtla, Laguna Escondida, 200 m, 30 XI 1985, *Sinaca 353*, AMO! MEXU x8. Santiago Tuxtla, 440 m, 10 V 1965, *Sousa 2359*, MEXU x2! Hotel Playa Azul (cultivado), 210 m, 8 XI 1967, *Sousa 3289*, AMO! MEXU! Amapixa, 800 m, 9 II 1968, *Sousa 3430*, AMO! CR! MEXU! WIS! Hidalgotitlán, camp. Hnos. Cedillo SO, 150 m, 7 III 1974, *Valdivia 22*, ILL! Camp. Hnos. Cedillo, 152 m, 12 III 1974, *Valdivia 86*, XAL! Camp. Hnos. Cedillo, 150 m, 2 VIII 1974, *Valdivia 1253*, XAL! Hidalgotitlán, Rio Alegre, 120 m, 26 I 1975, *Valdivia 1865*, MEXU! MO! XAL! Ixtacuaco, 50 m, 8 XII 1982, *Ventura 19806*, AMO! Tlapacoyan Lagunilla, 350 m, 3 XI 1983, *Ventura 20756*, AMO! **Oaxaca:** Without locality, 4000 ft, *Galeotti 5359B*, BR! G! L! P! Cordillera, Porphyres de la Parada, 6500 ft, VI 1840, *Galeotti 5087*, K-L! P! W-R! Cordillera, 4000 ft, I 1840, *Galeotti 5216*, P! Yavesia, 4500 ft, V 1845,

Galeotti 5358, P! Santa María Chimalapa, 300 m, 2 I 1986, *Hernández 2015*, CAS! MEXU! Trapiche de la Concepción, I 1884, *Liebmann 452, 453, 454*, K-L! W-R! Trapiche de la Concepción, I 1843, *Liebmann 6812*, M! US! Trapiche de La Concepción, VII 1842, *Liebmann 6812*, US! Santa María Chimalapa, Paso de la Garza del Río Portamonedas, 830-900 m, *Maya 1945*, MEXU x2! MO! Comaltepec, 1800-3000 ft, 31 VII 1894, *Nelson 920*, US! Oaxaca, 5500 ft, 25 V 1906, *Pringle 10186*, B! CM! E! ENCB! F! G x2! K-L! M! MEXU! NY! P! UC! US! W-R! Z! Santa María Jacatepec, E de San Agustín, 570 m, 24 X 1990, *Ramos 543*, AMO x2! Santa María Chimalapa, al pie de la vertiente N de la Sierra de Tres Picos, 1 IV 1996, 210 m, *Salazar 5514*, AMO! Ibid. *Salazar 5517*, AMO! Camino Oaxaca-Tuxtepec, km 101.4, 6500 ft, 27 X 1977, *Thurston s.n.*, AMO x2! CHAPA! ENCB! F! MEXU! **Chiapas:** Without locality, *Hágsater 10134*, AMO x2! Pinola, 3300 ft, 28 VII 1964, *Breedlove 6606*, CAS! F! MEXU! MICH! US! WIS! Tapanatepec, 2900 ft, 17 V 1965, *Breedlove 9969*, CAS! F! MEXU! U! WIS! Las Margaritas, W of Laguna Miramar, 350 m, 11 II 1973, *Breedlove 33183*, CAS! Ixtapa-Soyaló, 1067 m, 21 VII 1981, *Breedlove 51691*, CAS! Motozintla de Mendoza-Niquivil, *Breedlove 69135*, CAS! Col. Rodolfo Figueroa, 1000 m, 16 VIII 1993, *Cabrera 203*, CORU! Jalisco (Selva Lacandona), 470 m, 23 XI 1976, *Calzada 2830*, ENCB! F! MEXU! SEL! XAL! Juquipilas, Cerro La Palmita, 1400 m, 7 VII 1994, *Castillo 32*, AMO! Ibid. *Castillo 32A*, AMO! Los Angeles-Tres Picos, 926 m, 2 VIII 1994, *Castillo 179*, AMO! El Cipresal, El Triunfo, 1750 m, *Castillo 1458*, AMO! Comitán, 12 IV 1949, *Clarlson 1972*, F! Soyaló-Chicoasén, 900 m, 1 V 1984, *Espejo 982*, MEXU! Palenque-Ocosingo, 14 X I984, *Hágsater 2350*, AMES! AMO x4! F! NY! Palenque-Ocosingo, 1 XII 1971, *Hágsater 2367*, AMO x2! F! K-L! MO! SEL! km 29.1 Tziscao-Bonampak, 348 m, 5 XII 1982, *Hágsater 5571*, AMO x4! CAS! SEL! Huixtla-Motozintla, ca. 1000 m, 16 IX 1985, *Hágsater 8110*, AMO x2! SEL! Cerro Tres Picos, 850 m, 13 VII 1987, *Jiménez 718*, AMO x2! Tuxtla Gutíerrez-Ocozocoautla, 1030 m, 31 V 1987, *Márquez 196*, ICACH! Crucero Palestina, 340 m, 7 I 1986, *Martínez 15513*, MEXU! Crucero Corozal, 180 m, 8 I 1986, *Martínez 15584,* MEXU! Ibid. *Martínez 15630*, MEXU! Ibid. *Martínez 15711*, AMO! MEXU! Crucero Corozal, 250 m, 9 I 1986, *Martínez 15852*, MEXU! Crucero Corozal, 250 m, 9 I 1986, *Martínez 15855*, AMO x2! MO! Ojo de Agua de San Javier, 370 m, 29 I 1986, *Martínez 16935*, MEXU! Tuxtla Gutiérrez-Ocozocuautla, 1030 m, 31 V 1987, *Martínez 21478*, MEXU! MO! Mt. Ovando, 9 VI 1937, *Matuda 2054*, F! MICH! MEXU! Nuevo Acatenango, 17 VI 1941, *Matuda 4758*, CAS! MEXU! Monumento natural Yaxchilán, 150 m, 10 II 1999, *Meave del Castillo 2256*, MEXU! Ocozocuautla-Malpaso, 800 m, 14 VII 1991, *Pérez 272*, AMO! Monserrate, *Purpus 10636*, US! Monserrate, *Purpus 10686*, UC! Ejido Sierra Morena, 1140 m, 6 VIII 2002, *Reyes 358*, MEXU! Ocozocuautla-Laguna Bélgica, 900 m, 19 IV 1989, *Soto 5420*, AMO! Motozintla-Niquivil, ca. 1700 m, 4 VII 1989, *Soto 5783*, AMO x5! Monte Líbano, 920 m, 7 VIII 1992, *Soto 6829*, AMO x2! **Tabasco:** Without locality, I 1840, *Linden s.n.*, G! Teapa (Cabarco), *Linden s.n.*, P! Ibid., *Linden 1215*, FI! **Campeche:** Without locality, 31 VIII 1932, *Oestlund 1337*, MEXU! US! **BELIZE:** El Cayo, near Vaca, 5 IV 1938, *Gentle 2450*, MICH! **GUATEMALA:** Without locality, 28 VII 1978, *Ackerman 1273*, SEL! Ibid. 1 I 1939, *Aguilar 407*, F! Ibid. 1 VIII 1866, *Bernoulli 114*, W-R! Ibid. 1200-1800 m, 9 VI 1882, *Lehmann 1615*, B! K-L! LE! US! Ibid. 1 XI 1878, *Regel s.n.*, W-R! Ibid. 1200-1800 m, 1 VI 1882, *Schuami 1915*, W-R! **Huehuetenango:** Malacatancito, ca. 1950 m, 4 I 1941, *Standley 82225*, F! Sierra de los Cuchumatanes, 900-1600 m, 28 VII 1942, *Steyermark 49691*, F x2! Río Trapichillo, 1200-1300 m, 21 VIII 1942, *Steyermark 51203*, F! **Sololá:** San Lucas Tolimán, 1 VI 1870, *Bernoulli 676*, W-R! San Lucas, 1200 m, 5 VI 1948, *Williams 14340*, F! **Escuintla:** Palín, 1 VII 1970, *Harmon 2944*, F! MICH! MO! **Petén:** Dolores, 18 XII 1961, *Contreras 3146*, LL! Dolores, 27 XII 1961, *Contreras 3190*, LL! Laguna Pacay, 200 m, 13 XI 1965, *Molina 15739*, F! P. N. Tikal, 21 XII 1970, *Tun 1515*, F! **Baja Verapaz:** El Chol, Sierra de Chuacus, 15 VII 1970, *Harmon 3135*, ENCB! NY! US x2! Cumbre-Salamá, 1030 m, 24 VII 1988, *Tenorio 14776*, MO! **Sacatepequez:** Alotenango, cult., San Miguel Dueñas, 1470 m, 5 VII 1993, *Véliz 3134*, MEXU! **Guatemala**: Without locality, 1 I 1939, *Aguilar 262*, F! Near Fiscal, ca. 1100 m, 18 XII 1940, *Standley 80398*, F! **Santa Rosa:** Santa Rosa, 3000 ft, 1 VI 1892, *Heyde 3486*, BR! NY! US! **Jalapa:** Cerro Alcoba, 1400-1500 m, 13 IX 1940, *Standley 77196*, F! Chahuite, 1650 m, 16 XI 1945, *Standley 77491*, F! **EL SALVADOR: Ahuachapan:** P. N. El Imposible, San Benito, Orquidario montaña El Talnetal, 650 m, 4 VI 1997, *Sandoval 1558*, MO! San Francisco Menéndez Cabecera del Corral Viejo, 850 m, 4 VI 1997, *Sandoval ES-01600*, MO! P. N. El Imposible, cabecera de la Quebrada Seca, 1000 m, 7 VII 1997, *Sandoval ES-01631*, MO! **San Salvador:** Santa Tecla, 6 VII 1971, *Giugnolini s.n.*, FI x2! Cumbre del Bálsamo, 700 m, 18 IV 1964, *Hamer 45*, MO! SEL! Cerro Chino, 1400 m, 23 IV 1994, *Linares 1305*, MEXU x2! Usulután, Laguna de Alegría, 1300 m, 15 VII 1999, *Williams 387*, MO! **HONDURAS:** Peña Blanca, 23 VIII 1976, *Matthews s.n.*, SEL! **Cortés:** San Buenaventura, 7 IX 1978, *Ackerman 1325*, SEL! San Buenaventura, 3 IX 1986, *Christenson 1567*, SEL! Rio Lindo, 2200 ft, 16 IX 1933, *Edwards 554*, MO! Santa Cruz de Yojoa, 2000 m, 28 X 1933, *Edwards 572*, B! **Comayagua:** Siguatepeque, Custeca, 3700 ft, 5 X 1932, *Edwards 278*, US! **La Paz:** Marcala-Gracias, 1320 m, 21 VI 1994, *Davidse 35167*, AMO! MO! **Francisco Morazán:** Las Mesas, 900 m, 14 VII 1947, *Molina 291*, F! **Choluteca:** Cerro Bella Vista, 800 m, 7 VIII 1955, *Molina 5487*, US! **El Paraíso:** El Paraiso, 2 XII 1996, *Linares 4057*, MEXU! Danlí, 28 XII 1976, *Mathews s.n.*, SEL! **NICARAGUA: Jinotega:** Without locality, 5 VI 1978, *Pridgeon s.n.*, SEL! Jinotega, 10 VII 1978, *Ackerman 1219*, F! Jinotega, 750 m, 6 VIII 1977, *Croat 42881*, MEXU! MO! Santa Fe Finca, 3400 ft, *Heller 4616*, SEL! **Nueva Segovia:** Without locality, *Heller 1558*, SEL! Jalapa, *Atwood 6771*, F! MO! SEL! Dipilto, 1100 m, 16 VII 1977, *Neill 2228*, MO! **Madriz:** Cerro Quisuca, ca. 1100-1250 m, 22 XI 1979, *Douglas 16032*, SEL! Cerro Quisuca, ca. 1100-1250 m, 31 V 1980, *Douglas 17366*, MO! SEL! **Estelí:** Without locality, 400 m, 10 VII 1978, *Ackerman 1220*, F! Estelí, 1000 m, 10 IX 1980, *Guzmán 1206*, MO! Estelí, 1000 m, 1 VII 1981, *Moreno 9747*, MO! SEL! Estelí, 1000 m, 8 VIII 1984, *Moreno 24391*, MO! SEL! Salto de Estanzuela, 12 VII 1975, *Neill ANI43*, MO! NY! **Chinandega:** Volcán Casita, Posoltega, 23 VII 1982, *Araquistain 2977*, MEXU! MO! **Managua:** Sierra de Managua, 600-900 m, 1 I 1930, *Garnier s.n.*, F! Casa Colorada, 850 m, 27 I 1923, *Maxon 7395*, US! **Boaco:** Cerro Mombachito, ca. 700 m, 29 XI 1983, *Aranda 15*, SEL! Cerro Mombachito, 900-1000 m, 3 X 1979, *Douglas 14629*, SEL! Cerro Mombachito, 900-1000 m, 6 XI 1980, *Douglas 18131*, MO! Cerro Mombachito, 900-1000 m, 30 IX 1980, *Moreno 3202*, MO! San Lorenzo, Sierra El Espino, 500-600 m, 11 XI 1982, *Moreno 18568*, MO! SEL! Camoapa, 1 XII 1940, *Tovar 5020*, SEL! **Chontales:** Mina Babilonia, ca. 500 m, 7 XII 1980, *Douglas 18637*, MO! **COSTA RICA:** Without locality, *Endres 318*, W-R! Ibid. 1 I 1882, *Hubsch s.n.*, W-R! Ibid. 1 X 1873, *Polakowsky 382*, B! Ibid. 10 II 1948, *Seibert 2504*, USJ! Carchi, 1100 m, 7 XI 1924, *Alfaro s.n.*, US! Ibid. 6 II 1925, *Alfaro s.n.*, US! Palmichal, 1000 m, 21 I 1925, *Alfaro s.n.*, US! Cartago-Paraiso, 1300-1400 m, 1 V 1958, *Horich s.n.*, UC! US! Turrialba, 15 I 1970, *Poveda 2*, USJ! **Guanacaste:** Cordillera de Tilarán, 550 m, 22 VI 1989, *Atwood 89-218*, MO! USJ! Lake Arenal, 13 VII 1965, *Croat 520*, MO! Río Chiquito de Tilarán, 700 m. 1 XII 1987, *Haber 7842*, AMO! F! MEXU! USJ! Ibid. *Haber* 7859, MO! Ibid. *Haber 7863*, CR! Cordillera de Tilarán, 9 III 1983, *Hágsater 7091*, AAU! AMO x4! CR! F! K-L! MO! P! S! SEL! USJ! Ibid. *Hágsater 7092*, AMO x2! USJ! Tilarán-El Arenal, 620 m, 26 I 1988, pressed 26 IV 1989, *Hágsater 9468*, AMO! Ibid. 18 XI 1991, AMO! INB! Ibid. pressed 9 X 1996, AMO x3! Ibid. pressed 26 X 1997, AMO! Cordillera de Tilarán, 2000 m, 13 XII 1964, *Jiménez 2709*, CR! F! NY! US! W-R! Tilarán, 500-650

m, 10 I 1926, *Standley 44175*, US! **Alajuela:** Alto de La Calera de San Ramón, 850 m, 1 IX 1921, *Brenes 142*, CR! NY! Tejona, 700 m, 3 XII 1993, *Morales 2129*, CR! **Puntarenas:** Z. P. Las Tablas, 1900 m, 22 III 1996, *Navarro 275*, F! **Heredia:** La Selva 358, 40-100 m, 15 III 1991, *Richardson K-98*, SEL! La Selva, ca. 100 m, 26 X 1981, *Smith 419*, CAS! F! MO! Santo Domingo, 1 XI 1934, *Valerio 1*, CR! **San José:** Without locality, *Comaire s.n.*, W-R x2! Puriscal Barbacoas, 1160 m, 9 IV 1990, *Jiménez 889*, CR! MO! Cerro Cangreja, 1200 m, 4 XII 1993, *Morales 2141*, CR! **Cartago:** Reventazón, 400 m, 30 VI 1925, *Alfaro s.n.*, US! Volcán Irazú, 8000 ft, 1 III 1896, *Alfaro 6967*, US! Tucurrique, 23 II 1996, *Blanco 629*, USJ! Juan Viñas-Hidroeléctrica, Congo, 30 III 1984, *Hágsater 6712*, AMO x2! Río Turrialba, 1 III 1894, *Smith 4953*, BR! US! Río Turrialba, 1600 ft, 1 III 1893, *Smith 6790*, US! El Guarco, ca. 5200 ft, 18 III 1952, *Stork 4532*, MO! **PANAMÁ: Chiriquí:** Cerro Punta, Llano del Volcán, 1500 m, 23 V 1946, *Allen 3532*, G x2! Boquete, 3000 ft, 22 VII 1947, *Allen 4703*, G! Planes de Hornito, 1400-1900 m, 28 XI 1979, *Croat 48822*, MO! Veraguas & Chiriqui, *Powell 100*, B! MO! **CUBA:** Without locality, 1 I 1822, *Lemonats s.n.*, W-R! **JAMAICA:** Without locality, Cult. 20 IX 1891, without collector, UWI! **PUERTO RICO:** Without locality, X 1889, *Stahl 97*, W-R! Yauco-Sabana Grande, Reserva Forestal Susua, ca. 400-500 m, 7 IV 1984, *Ackerman 1996*, UPRRP! Dorado, ca. 100 m, 1 I 1982, *Ackerman 2001*, UPRRP! Río Grande, Enseñada Comezón, 16 XII 1984, *Ackerman 2045*, AMO x5! K-L! MO! NY! SEL! Dorado, 4 XII 1985, *Ackerman 2209*, UPRRP! Culebra Is., 27 III 1986, *Ackerman 2249*, UPRRP! Coamo Las Piedras Chiquitas, ca. 475-500 m, 3 III 1991, *Axelrod 2125*, MO! UPRRP! Bayamón Bo. Hato Tejas, 25-100 m, 16 IV 1991, *Axelrod 2355*, UPRRP! Near Coamo, 18 III 1927, *Britton 9029*, S! Hato Tejas Bayamón Mogote, ca. 100 m, 28 VIII 1966, *Byer 66-877*, UPRRP! Bayamón, El Parque de Las Ciencias, 29-90 m, 27 IX 1989, *Carrasquillo 80*, UPRRP! Dorado Barrio Maguayo, ca. 50 m, 25 IV 1987, *Davila 88*, UPRRP! Grande Zarzal, ca. 1 m, *Hágsater 9212,* AMO x2! Dorado, ca. 0 m, 26 XI 1967, *Morales 67-3055*, UPRRP! Maricao Forest, 457 m, 12 XII 1982, *Parrilla 30*, UPRRP! Isla de Culebra, 140-160 m, 28 XII 1983, *Proctor 39987*, SJ! Las Tetas de Cayey, ca. 730 m, 25 X 1986, *Proctor 42405*, SJ! Río Grande Barrio Zarzal, 0 m, 28 XI 1986, *Proctor 42673*, SJ! Las Tetas de Cayey, 820-830 m, 25 X1987, *Proctor 44076*, SJ! Vieques Island, Isabel Segunda, 24 I 1914, *Shafer 2394*, CAS! Cromo, Farajones, 13 XII 1885, *Sintenis 3190*, W-R! **UNITED STATES VIRGIN ISLANDS:** St. Croix, Norsiden, 9 II 1906, *Börgesen s.n.*, U! St. Thomas, I 1855, *Duchassaing s.n.*, CAS! D.W.L. St. Thomas, Signalhill, *Eggers s.n.*, W-R! St.Thomas, VI 1880, *Eggers s.n.*, US! St. Thomas, Signalhill, 400 m, XII 1880, Eggers s.n., Z! St. Thomas, Signal hill, 400 m, 1 I 1880, *Eggers 233*, BR! L! P x3! St. Croix, Jakobsberg, 155 m, 30 I 1972, *Fosberg 54157*, L! St. Croix, Annely Bay Valley, 21 I 1981, *Fosberg 60812*, US! St. Thomas, I 1850, *Halmarpon s.n.*, S! St.Thomas, *Hornbeik s.n.*, W-R! St. Thomas, Flaghill, 1 II 1914, *Oestenfeld 234*, BR! P! St. Thomas Flaghill, 11 II 1914, *Ostenfeld 312*, U! St. Jan, Bethanian, *Brentet s.n.*, L! St. Jan, Cruz Bay, 23 II 1914, *Oestenfeld 400*, P! Sta. Cruce, VIII 1880, *Richard s.n.*, P! St. Croix, Mt. Eagle, 31 I 1896, *Ricksecker s.n.*, MO! St.Thomas, *Schomburgh 41*, W-R! **BRITISH VIRGIN ISLANDS: Tortola:** Big Tabago, ca. 100 m, 31 V 1968, *Byer 68-1544*, UPRRP! Tortola, Baughers bay, ca. 40 m, 4 IV 1969, *Byer 69-123*, UPRRP! Elizabeth Beach, 4 m, 19 XII 1965, *Darcy 380A*, MO! **ST. MARTIN:** Nakedboyhill, 200-265 m, 21 VIII 1906, *Boldingh 2727*, U! Mont des Accords-Centryhill, 200-300 m, 25 VIII 1906, *Boldingh 2897*, U! Milldrumhill, 300-400 m, 4 IX 1906, *Boldingh 3154*, U! Bethlehem-Cul de Sac, 100-200 m, 14 IX 1906, *Boldingh 3421*, U! Centryhill, 1 V 1885, *Suringnar s.n.*, L x2! **ST. BARTHELÉMEY:** Mt. Touche, 4 II 1931, *Questel 408*, P! Tamche, 70 m, 27 XI 1938, *Questel 656*, US! **SABA:** Without locality, *Arnoldo 922*, U! Ibid. *Buch 42*, W-R! Bottom-Marypoint, 250 m, 9 VII 1906, *Boldingh 1554*, U! Bobbyhill, 300 m, 10 VII 1906, *Boldingh 1597*, U! Crispeen, 400 m, 14 VII 1906, *Boldingh 1727*, U! Saba, 400 m, 26 XI 1964, *Hummel s.n.*, S! Saddle, 25 V 1953, *Stoffers 3593*, U! Booby Hill, 12 VIII 1953, *Stoffers 4315*, U! Ibid. *Stoffers 4317*, U! **ST. EUSTATIUS:** Witout locality, *Groll-Meyer 281*, U! Ibid. *Groll-Meyer 308*, U! Quill near Bengalen, 13 VI 1906, *Boldingh 715*, L! U! Quill, 29 VII 1953, *Stoffers 3961*, U! Franse grens, 4 V 1885, *Suringnar s.n.*, L! Panga hill, 1500 m, 9 IV 1885, *Suringnar s.n.*, L! **ST. KITTS & NEVIS:** St. Kitts, Wingfield, 8 IX 1901, *Britton 480*, US! **ANTIGUA:** Peas Hill, 21 VIII 1937, *Box 980*, US! Boggy Peak, Shckerley Mountains, 200-400 m, 2 IV 1956, *Smith 10390*, NY! S! UC! **ANTILLES FRANCAISES***:* Without locality, 15 V 1937, *Stehlé 1633*, P! **GUADELOUPE:** Without locality, *L'Herminier s.n.*, G! St. Barthelemi, *Forsstrom s.n.*, UC! Buisse Zone, 480 m, *L'Meat s.n.*, L! Desirade, 2 X 1964, *Stehle 6432*, P! **DOMINICA:** Scrubby Atkinson-Crayfish River, 3 V 1940, *Hodge 3405*, NY! St. Paul Rodneys Rock, 20 ft, 11 XI 1964, *Nicolson 1971*, E! **MARTINIQUE:** Without locality, VI 1873, *Hahn 1453*, G! Ibid. *Martin s.n.*, W-R! Ibid. *Martin 436*, G! Ibid. *Plie s.n.*, P! Ibid. 3 X 1936, *Rodríguez 626*, P! Ibid. 1 IV 1839, *Steineill s.n.*, P! St. Pierre, XII 1867, *Hahn 87*, Fl! G! L! P x3! W-R! Montagne Paleé, 29 XII 1981, *Sprunger s.n.*, RENZ! **ST. LUCIA:** Gros Piton, 13 VII 1945, *Beard 1162*, MO! S! UC! US! Mont du Cap, Quarter of Gros Islet, 2 VIII 1967, *Sauer 4302*, WIS! St. Lucia, 15 ft, 8 XII 1984, *Slane 393*, GH! Gros Piton, 1000-1500 ft, 3 VIII 1959, *Webster 9437*, S! **BARBADOS:** Bridgetown, 12 VII 1929, *Geyshes s.n.*, U! **GRENADA:** St. Georges, 17 III 1905, *Broadway s.n.*, BR! Ibid. 19 III 1905, *Broadway s.n.*, G! Botanic Station Grenada, 14 IV 1906, *Broadway s.n.*, BR! West Indies, 1 V 1888, *Elliott 133*, US! **COLOMBIA:** Without locality, cult. by Edwin Granada cerca de Guarné, *Escobar 5329*, AMO! flowers in spirit AMO! slide color AMO! **Antioquia:** Medellin-Molillo, *Ospina 192*, JAUM! Boquerón de San Cristobal, 15 IX 1948, *Ruiz 5*, US! Medellín, 1600 m, 13 X 1949, *Uribe 2002*, COL x2! **Norte de Santander:** Miranda-El Alto de la Aurora, 950-1087 m, 23 XI 1941, *Cuatrecasas 13416*, COL x2! F! **Boyacá:** Vereda de Santa María (Guateque), 1400 m, 26 IV 1961, *Schmidt-Munn 58*, COL! **Tolima:** Mariquita, 1 I 1849, *Triana 126*, W-R! **Cundinamarca:** Chocontá-Guateque, 1800 m, 1 VII 1947, *Haught 5904*, COL! US! "San Claver", Santandercito, 1550 m, 14 VI 1968, *Ortiz 118*, HPUJ x2! Santandercito (San Claver), 1600 m, 10 II 1949, *Restrepo 163*, COL! La Mesa et Copa, 1 I 1851, *Triana 18120*, P! **Meta:** Río Ariari, ca. 500 m, 1 XII 1937, *Renz 3063*, RENZ x2! **VENEZUELA:** Without locality, 7 IX 1978, *Bergold 2*, AMO! Colonia Tovar, I 1854, *Fendler 1449*, AMES! Tabay, 1800 m, 29 X 1930, *Gheriger 597*, F! Egido-La Azulita, 1400-1500 m, IX 1953, *Humbert 26562*, P! Truxillo-Mérida, 4000-14500 ft, I 1842, *Linden 637*, G! Ibid. IV 1842, BM! BR! L! P x2! W-R x2! **Falcon:** Sierra de San Luis, Cucaida, 1300 m, 14 IX 1978, *Werff 3143*, U! **Lara:** Cerro Palo de Agua, Cerro Guacamuco-Gebiet, 1000 m, 1 X 1948, *Renz 4916*, RENZ! **Trujillo:** Jají, Jajo, 1 VIII 1958, *Aristeguieta 3382*, NY! US! Trujillo-Boconó, 1500 m, 11 IX 1947, *Renz 4481*, RENZ! **Miranda:** Guatire-Hacienda La Planada, 1200 m, 11 VIII 1956, *Renz 8778*, RENZ! **Táchira:** Rubio, 900-1000 m, 18 III 1981, *Liesner 10699*, MO! Seboruco, 900 m, 18 VIII 1949, *Renz 5941*, RENZ x2! **Distrito Federal:** Caracas, I 1840, *Claude s.n.*, P! Avila, 1500 m, 28 IX 1940, *Cornelio 397*, F! Caracas, 960 m, 20 VIII 1939, *Williams 11148*, F! **Monagas:** Caripe, 1200 m, 30 VII 1956, *Renz 8674*, RENZ! **Bolivar:** Sepata-San Felix, ca. 200 m, 13 XI 1958, *Renz 9196*, RENZ! Altiplanicie de Nuria, 230-350 m, 21 I 1961, *Steyermark 88647*, W-R! **GUYANA:** Without locality, I 1820, *Pevvotlae 114*, G! Aurora Village, Essequibo, 30 IV 1976, *Grewal 165*, U! **SURINAM:** Without locality, *Kappler 335*, S! Langemankondre-Galibi, 5 XI 1948, *Lanjouw 1040*, U! Marowijne, Langamankondre, 9 XI 1971, *Teunissen 1071*, U! **FRENCH GUYANA:** Without locality, *Leprieur s.n.*, P! Ibid. 1 I 1820, *Perrottet s.n.*, P! Ibid., *Richard s.n.*, P! Ibid., *Richard 52*, P! Cayenne, 18 XI 1982, *Billiet 1722*, BR! Cayenne, 24 VII 1921, *Broadway 959*, US! Rémire, pointe de Rontarel, 13 IV 1985, *Feuillet 1725*, CAY! Cayenne, 30 V 1978, *Fournet 2*, CAY! Ile de Cayenne, 5 m, 2 IX 1992,

Goff 69, CAY! Cayenne, Cité Brutus, 1 XII 1972, *Granville 39*, CAY x2! HB! Mahury, *Rouquit s.n.*, P! Oyapock, 18 XI 1976, *Veyret 1440*, CAY ! Cayenne, 17 IV 1979, *Veyret 1610*, CAY x2! **BRASIL: Amapá:** Amapá, 6 XI 1979, *Austin 7325*, MG! US! Aporema, Campo Belo, 1 NOV 1957, *Egler 673*, MG! Ilha Macapa, 30 XI 1954, *Xavier s.n.*, HB! **Pará:** Ilha de Marajó, Río Paracauary, 20 II 1950, *Black 30-8939*, P! **Pará/Maranha:** Río Gurupy, 20 I 1910, *Lima s.n.*, SP! Ibid. *Lima 10764*, MG! **Ceará:** Paracurú, 19 XII 1938, *Barroso 244*, SP! **ECUADOR: Morona-Santiago:** Misión Salesiano, Bomboiza, 800 m, 24 VII 1985, *Baker 6244*, QCNE! Misión Bomboiza, ca. 700-800 m, 27 IX 1967, *Sparre 19226*, S x2! **PERU: Cusco:** La Convención, Sta. Rosa, *Soukup 786*, F! **Huanuco:** Cayumba, 850 m, *Bennett 3803*, USM! Huánuco-Tingo María, 900 m, 7 III 1947, *Ferreyra 1868*, UC! USM!
OTHER RECORDS: MÉXICO: Without locality, *Hágsater 263*, Illustration AMO! ENCB! MEXU! **COLOMBIA:** Flora de La Real Expedición Botánica del Nuevo Reino de Granada José Celestino Mutis IX: 3, pl. 7, illustration. Orquídeas Nativas de Colombia 5 (suppl.): 767, photo 893 Marleny y Hernando Granada fotografía. **ANTILLAS:** color photo in Orchidaceae Antillanae, fig. III, f. 2000.

EPIDENDRUM CLOWESII Bateman ex Lindl. Plate 1321

OTHER SPECIMENS: MEXICO: Oaxaca: N de San Pedro Tapanatepec, 950 m, 17 I 1986, *Maya 2765*, MEXU! Km 131 Sola de Vega-Puerto Escondido, 29 III 1970, *Pollard 2-190-26*, MEXU x3! **Chiapas:** Ocozocoautla, 3000 ft, pressed, II 1978, *Bashor 2009*, AMO! Villa Corzo, E of Cerro Tres Picos near Cerro Bola, 1500 m, 9 II 1972, *Breedlove 23978*, AMES! DH! Las Cruces-Arriaga, 1 I 1947, *Dawson s.n.*, US! El Triunfo, 1900 m, 27 II 1990, *Hamsphire 771*, MEXU! El Triunfo, 2000 m, 8 III 1993, *Hietz 957*, Herb. Hietz x2! Siltepec, 1 I 1937, *Matuda 366*, AMES! MEXU! MICH! US! Lake Monte Bello, 1350 m, 5 II 1935, *Nagel sub Oestlund 4483*, AMES! Mt. S of Tuxtla Gutiérrez, 600 m, 26 I 1935, *Oestlund 4442*, AMES! Buenos Aires-El Porvenir-Siltepec, 2100-2150 m, col. 25 VII 1989, press. 5 III 1990, *Soto 5956*, AMO! Ibid. press. 12 III 1990, AMO! Ibid. 31 III 1991, AMO! Ibid. 7 II 1993, AMO x2! **GUATEMALA:** Without locality, *Bernoulli 273*, BR! K-L! NY! W-R! Ibid. cult. Guatemala, 24 XII 1976, *Hágsater 4290*, AMO! ENCB! (Illustration voucher, flowers in spirit) Ibid. 28 I 1941, *Steyermark s.n.*, AMES! Esclavos River, 2000 ft, 8 II 1935, *Ward 89*, AMES! **Huehuetenango:** Pueblo Viejo River, 28 VII 1896, *Seler 2314*, AMES! **Chimaltenango:** Las Calderas, 1800-2100 m, 22 XI 1938, *Standley 57838*, AMES! F! **Jalapa:** Jalapa, 4450 ft, 7 I 1908, *Kellerman 7924*, US! **Quetzaltenango:** Volcán de Zunil, Aguas Amargas, ca. 2430-2850 m, 17 II 1939, *Standley 65454*, F! **Retalhuleu:** Retalhuleu, 237 m, 10 I 1907, *Kellerman 6036*, F! US! **San Marcos:** Tajomulco Volcano, ca. 2300 m, 31 XII 1964, *Williams 26967*, F! **Santa Rosa:** El Naranjo, 1 XII 1892, *Heyde 4272*, AMES! BR! US! Estanzuela, 800 m, I 1893, *Heyde 4275*, AMES! BR! US! **Suchitepéquez:** Mazatenango, 2 III 1905, *Maxon 3619*, US! Volcán Santa Clara, 8000 ft, 23 V 1942, *Steyermark 46749*, F! **Zacapa:** Santa Rosalia-Río Sitio Nuevo, 1200-1500 m, 9 I 1942, *Steyermark 42255*, AMES! F! **EL SALVADOR: San Salvador:** Cerro del Guayabal, *Calderón 24*, AMES! La Palma-Tunnel, 1100 m, 15 XI 1964, *Hamer 127*, AMES! SEL! La Libertad Boquerón, crater del Volcán San Salvador, 1800 m, 29 XI 1977, *Hamer 646*, F! MO! Planes de Renderos, 950 m, XII 1940, *Lewy s.n.*, AMES!

EPIDENDRUM CNEMIDOPHORUM Lindl. Plate 1322

OTHER SPECIMENS: Without locality, *Dayer s.n*., W-R 4534! **MÉXICO:** III 1840, *Linden 1229*, G x3! P! W-R x3! **Chiapas:** Yashanal, 6000 ft, 17 III 1968, *Breedlove 9381*, CAS! F x2! LL! MEXU! WIS x2! Las Margaritas to Campo Alegre, 1600 m, 5 V 1973, *Breedlove 34750*, CAS! Yashanal, 2400 m, 5 III 1981, *Breedlove 50001*, CAS! Ibid. 2300 m, 22 IV 1981, *Breedlove 51055*, CAS! SE of Jitotol along road to Bochil, 1600 m, 24 II 1982, *Breedlove 58509*, CAS! Volcán Tacaná, NE de Unión Juárez, 1700 m, 9 VIII 1986, *Fernández 3540*, AMO! Chiotic, 1990 m, 22 IV 1993, *González-Espinosa 1895*, AMO! Tz'unum, 1650 m, 28 III 1988, *Gómez 79*, CAS! NY! MO! Oxchuc, 2100 m, 7 IV 1988, *Gómez 107*, CAS! MEXU! Monte Bello, 1400 m, 30 XII 1970, *Hágsater 1299*, MEXU! Oxchuc, 6275 ft, 24 IV 1980, *Pollard sub Hágsater 4305*, AMO! (Illustration voucher) MEXU! Oxchuc, II 1977, *Lamas s.n.*, AMO x2! entre Talquián y Chiquihuite, 1800 m, 28 IV 1987, *Martínez 20412*, AMO x3! entre Tanquián y Chiquihuite, 1800 m, 18 IV 1987, *Martínez 20479*, MEXU! Oxchuc, 1920 m, 23 II 1995, *Mejía 18*, MEXU! Oxchuc, 2090 m, 14 III 1995, *Mejía 98*, MEXU! La Cueva Yashanal, 15 III 1984, *Shilom 7410*, AMO x9! Santa Cruz en San Felipe, 15 XI 1986, *Méndez 9806*, CAS! NY! MEXU! MO! **Tabasco:** Teapa, III 1840, *Linden 1225*, FI! W-R! **GUATEMALA:** Without locality, *Klabor s.n.*, W-R 4796! Ibid. *McCullough 1446 sub OIC 0426*, SEL! Without locality, 20 III 1891, *Moore s.n*, K-L! **Alta Verapaz:** Cobán, *Tuerckheim s.n.*, W-R 12262! Pansamalá, 3800 ft, II 1887, *Tuerckheim 1143,* BR! US! **Huehuetenango:** Puente Alto Barillas, 1400 m, 20 IV 1958, *Holdridge 2323*, US! **San Marcos:** S facing slopes of Volcán Tajomulco, 1400-1700 m, 8 III 1940, *Steyermark 37259*, F! **Suchitepéquez:** Volcán Santa Clara, 1250-2650 m, 23 V 1942, *Steyermark 46622*, AMES! F x2! **EL SALVADOR: Santa Ana:** Cerro Montecristo-Los Planes, 2000 m, 14 XII 1977, *Hamer 653*, SEL! **HONDURAS:** Without locality, *Plowden 28*, SEL! **Copán:** Cerro Azul National Park, 1600 m, 9 II 1992, *Thomas 195,* AMO! MO x2! **Cortés:** NW of Cofradía, ca. 5000 ft, 11 II 1953, *Gentry 12487*, LL! Cusuco National Park, near Río Cusuco, 1550 m, 22 III 1993, *Thomas 709*, MO!
OTHER RECORDS: MEXICO: Chiapas: Without locality, *Richard 14*, illustration, K-L! W-R 11384! W-R 19554! Without data, photographed by *Claudio Contreras Koob*, published in M. Sarmiento (2000). Without locality, *Lamas s.n.* photographed by *Hágsater*, slide, AMO! color photo in M. Soto *et al.*, 2007, fig. 0315. Monte Bello, 1400 m, 30 XII 1970, *Hágsater 1299*, slide, AMO! cult. San Cristóbal de las Casas, 26 III 1959, *Greenwood s.n.*, slide, AMO! Ibid. 19 IV 1963, *Greenwood s.n.*, slide, AMO! **GUATEMALA: Alta Verapaz:** Cobán, *Hágsater s.n.*, slide, AMO! **EL SALVADOR: Santa Ana:** Cerro Monte Cristo, *Hamer s.n.*, note, AMO!

EPIDENDRUM CULMIFORME Schltr. Plate 1324

OTHER SPECIMENS: MEXICO: Chiapas: Nuevo Momón, ca. 1500-1600 m, col. 9 VIII 1992, pressed cult. 13 XI 1992, *Soto 7151*, AMO! Ibid. pressed cult. 30 I 1998, *Soto 7155*, AMO! Ibid. 12 X 1992, *Soto 7159*, AMO! Ibid. 13 X 1992, *Soto 7159*, AMO (x2)! (Illustration voucher). **GUATEMALA: Alta Verapaz:** Cobán, 1557 m, VII 1912, *Türckheim s.n.*, L! Cobán, 4500 ft, XII 1877, *Türckheim 34*, W-R! Ibid. 1550 m, VII 1912, *Türckheim 2489*, AMES (x2)! G! M! US! W-R! **Baja Verapaz:** Purulhá, col. IX 1977, pressed cult. 26 VIII 1979, *Hágsater*

5311, AMO! (Illustration) Ibid. 13 VIII 1983, *Hágsater 5311*, AMO (x2)! Ibid. 19 IX 1984, AMO (x4)! Ibid. 6 VIII 1979, *Hágsater 5312*, AMO! **Zacapa:** N of San Lorenzo, Sierra de Las Minas, 2225 m, 15 VII 1986, *Catling G7236*, AMO! Quebrada Alejandra, summit of Sierra de las Minas, 2500 m, 13 X 1939, *Steyermark 29885*, F! **HONDURAS: Comayagua:** Cordillera Merendón, vicinity El Portillo, 2000 m, 2 IX 1975, *Molina 31008*, F! MO! Siguatepeque, above El Achote, 1850 m, 1 VIII 1936, *Yuncker 6443*, AMES! NY! **EL SALVADOR: Santa Ana:** Cerro Montecristo, 2200 m, 24 IV 1967, *Hamer 190*, AMES! Cerro Montecristo, 2000 m, 10 IV 1973, *Hamer 406*, F! SEL! **NICARAGUA: Jinotega:** Macizos de Peñas Blancas, 4050 ft, XI 1960, *Heller 1838*, MO SEL (x3)! **Matagalpa:** Tuma Grande, 3500 ft, XI 1960, *Heller 2728*, SEL (x4)! Mt. El Arenal, 1300 m, *Molina 31588*, MO F Santa María de Ostuma, 1600 m, 15 I 1965, *Williams 27676*, F!

OTHER RECORDS: MEXICO: Chiapas: Nuevo Momón, ca. 1500-1600 m, *Soto 7155*, color photo by Hágsater, in M. Soto *et al*., 2007, Orchids of Mexico, Digital Catalogue: fig. 0318, México, Instituto Chinoín; Nuevo Momón, 25.8 mi al E de Las Margaritas por el camino a Cruz del Rosario, ca. 1500-1600 m, 8 VIII 1992, *Soto 7159*, spirit, AMO! **GUATEMALA: Baja Verapaz:** Purulhá, *Dix s.n.*, spirit, AMO! Purulhá, col. IX 1977, *Hágsater 5311*, spirit and flower card, AMO! **EL SALVADOR: Santa Ana:** Cerro Montecristo, Los Planes, 1 VIII 1978, *Hamer 402*, color photo, AMO! **NICARAGUA: Jinotega:** Tuma Grande, 3900 ft, *Heller 5615*, notes by Hamer 1982, AMO! Santa María Ostumas, 4400 ft, *Heller 8821*, xerox of illustration and notes, AMO! **Matagalpa:** Tuma Grande, 3500 ft, XI 1960, *Heller 2728*, xerox of illustration, AMO!

EPIDENDRUM ENGLERIANUM F.Lehm. & Kraenzl. Plate 1328

OTHER SPECIMENS: Without locality, W-R 4486! Ibid. W-R 4487! Perú-Ecuador, Hort. Bot. Gart. Heidelberg. pressed cult. 9 XI 1982, *Rauh 52867a* sub *Hágsater 6889*, AMO! (Illustration voucher.) Ibid. 22 XII 1984, *Rauh 52867a* sub *Hágsater 6889*, AMO! QCA! COL! W-R! Ibid. *Sodiro s.n.*, QPLS! **ECUADOR:** In Andibus Ecuadorensibus, *Spruce s.n.*, K-L! **Napo:** Baeza, 1900 m, 23 IX 1939, *Asplund 9228*, S! Oeste de Baeza, 2000 m, 12 IV 1982, *Balslev 2382*, AMES! NY! QCA x2! QCNE! Baeza-Tena, 1900-2000 m, 27 X 1976, *Balslev 10394*, AAU! Vicinity of Baeza, 2000 m, 28 VI 1982, *Besse 1516*, SEL! Ibid. *Besse 1517*, F! MO! SEL! 5 km south of Baeza, 1800 m, 26 VI 1983, *Bohlin 694*, GB! S of Baeza, 1800 m, 28 II 1987, *Bohlin 1536*, QCA! Quito Baeza, unos 45 km al E de Quito, ca. 1700 m, 29 III 1994, *Carnevali 3464*, AMO! CICY! Sumaco mountains, 2000 m, 18 III 1996, *Clark 2296*, MO x2! QCNE! SEL! SW of Lago Agrio, 1750 m, 24 IV 1984, *Croat 58520*, MO! QCA! SEL! Borja, 1650 m, 3 XII 1982, *Dalström 315*, SEL! Around Borja, 1650 m, 5 XII 1982, *Dalström 323*, SEL! Baeza, 1850 m, 17 VI 1983, *Dodson 13996*, MO! SEL! Quito to Baeza, 1800 m, 30 VI 1985, *Dodson 15890*, MO! QCNE! Ibid. 1840 m, 29 V 1986, *Dodson 16434*, AMO! MO! QCNE! SEL! E of El Chaco, ca. 1700 m, 7 XI 1974, *Gentry 12598*, AAU! MO! SEL! Ibid. *Gentry 12609*, MO! Ibid. *Gentry 12617*, AAU! F! SEL! MO! Baeza, 1920 m, 9 VII 1975, *Gili 392*, W-R x2! NE Borja, 5300 ft, *Grubb 1116*, AMES! K-L! UC! Ibid. 5700 ft, 3 VIII 1968, *Grubb 1225*, AMES! K-L! El Chaco, 1600 m, 15 I 1959, *Harling 3898*, S! Baeza, ca. 2000 m, 3 II 1980, *Harling 16144*, GB! NW of Santa Rosa de Quijo, ca. 1500 m, 12 II 1980, *Harling 16480*, GB! Río Pastaza, 1650 m, 12 I 1933, *Heinrichs 197*, G! Papallacta-Baeza, 2050 m, 6 VI 1973, *Holm-Nielsen 6983*, AAU! AMES! SEL! Ibid. *Holm Nielsen 6988*, AAU! Ibid. *Holm-Nielsen 6990*, AAU! below Cuyuja, 2350 m, 28 III 1979, *Holm-Nielsen 16199*, AAU! QCA! Ibid. *Holm-Nielsen 16204*, AAU! QCA! union of Río Borja and Río Quijos, 1750 m, 19 IX 1980, *Holm- Nielsen 26109*, AAU! Ibid. *Holm-Nielsen 26220*, AAU! Ibid. *Holm-Nielsen 26224*, AAU! Ibid. *Holm Nielsen 26254*, AAU! NW of Borja, 1825 m, 20 IX 1980, *Holm-Nielsen 26283B*, AAU! NW of Borja, 1950 m, 20 IX 1980, *Holm Nielsen 26441*, AAU! Ibid. *Holm Nielsen 26474*, AAU! Ibid. *Holm-Nielsen 26480*, AAU! Río Borja, 1760 m, 21 IX 1980, *Holm Nielsen 26571*, AAU! Ibid. 1780 m, *Holm-Nielsen 26648*, AAU! Papallacta-Baeza, 2150 m, 14 IV 1985, *Huttel 632*, QCA! Baeza, III 1865, *Isern 1260*, GB! Ibid. 6000 ft, 1857, *Jameson s.n.*, W-R 14156! Cuyuja-Baeza, ca. 2350 m, 28 III 1979, *Løjtnant 11430*, AAU! GB! Ibid. *Løjtnant 11442*, AAU! GB! Baeza-Cosanga, ca. 2000 m, 28 III 1979, *Løjtnant 11449*, AAU! GB! N of Baeza, ca. 1500 m, 10 VIII 1978, *Luer 3184*, SEL! Baeza, 2000 m, XII 1985, *Luther 966*, MO! SEL x2! Ibid. *Luther 967*, SEL x2! E of Papallacta, 2600 m, 26 III 1972, *MacBryde 1262*, AMES! Vicinity of Baeza, 1900 m, 27 III 1972, *MacBryde 9587*, QCA! SW of the Village, 2000 m, 20 X 1976, *Oellgaard 10217*, AAU! F! MO! NY! Baeza-Archidona, 1700 m, 29 V 1991, *Palacios 7359*, QCNE! El Chaco, 1700-2000 m, 15 III 1991, *Quezada 480*, QCA! Baeza, pressed cult. 14 XI 1984, *Rauh 52867* sub *Hágsater 6892*, AMO! QCNE! Ibid. 21 II 1986, *Hágsater 6892*, AMO! Ibid. 10 IX 1990, *Hágsater 6892*, AMO! San Francisco de Borja, ca. 1700 m, 6 VII 1980, *Sobel 2387*, NY! Baeza, III 1918, *Sodiro s.n.*, QPLS! km 6 Baeza-Quito, 2100-3000 m, 8 VI 1983, *Thurston T-3122* sub *Hágsater 7489*, AMO! E of El Chaco, 600-1500 m, 14 IV 1984, *Thurston 4047* sub *Dodson 14275*, AMO x2! QCNE! MO! **Tungurahua:** Tunguragua, VI 1877, *Lehmann s.n.*, W-R 49547! Tunguragua Vulcan, 2000-2300 m, 30 X 1879, *Lehmann 329*, G x2! LE! above Baños, 2200 m, *Luer 873*, SEL! Tungurahua Vulcan, XI 1902, *Sodiro 169*, QPLS! Tunguragua, *Spruce s.n.*, K-L x2!
OTHER RECORDS: ECUADOR: Napo: Quito-Baeza, 2000 m, *Aubron s.n.*, digital imagen, AMO!

EPIDENDRUM EUSTIRUM Ames, F.T.Hubb. & C.Schweinf. Plate 1329

OTHER SPECIMENS: MEXICO: Without locality, *Barrett sub OIC 7923*, SEL! Ibid. *Botteri s.n.*, W-R 49715! Ibid. *Purpus 7824*, UC! Rancho de Cuijumboya, *Sallè s.n*, BM! **Puebla:** Mt “Dos Cerros”, N of Teziutlán, 1780 m, 13 X 1934, *Nagel 2478*, AMES x2! Presa Necaxa, 4 XI 1966, *Mitastein 199*, ENCB! Hueytamalco, 1000 m, 18 II 1970, *Ventura 577*, DH! Herb. Dressler! ENCB! MICH! **Veracruz:** Catemaco, Cerro Pipiapan, 415 m, 4 III 1991, *Carmona 10*, AMO! acueducto Xalapa-Huitzilapa, 1690 m, *Flores 134*, AMO! Bastonal-Santa Marta, 920 m, 26 XI 1978, *Gómez-Pompa 5442*, XAL! Volcán Santa Marta, 1440-1700 m, pressed cult. 9 XI 1982, *Hágsater 6183*, AMO! Huayacocotla-Zontecomatlán, km 30, 5000 ft, pressed cult. 5 XII 1982, *Hágsater 6566*, AMO! Ibid. pressed cult. 22 X 1984, *Hágsater 6566*, AMO! Ibid. pressed cult. 12 XI 1984, *Hágsater 6568*, AMO! Ibid. pressed cult. 7 X 1985, *Hágsater 6568*, AMO! E of Orizaba road to Tuxpango, 1200 m, *Nagel 4599*, AMES! US! below Tlapacoyan, 800 m, 20 III 1935, *Nagel 4646*, AMES! Volcán San Martín, 400 m, 11 V 1936, *Nagel 5795*, AMES! Finca Consolapan, carretera vieja Jalapa-Coatepec, col. 17 VIII 1991, pressed cult. 10 X 1991, *Pérez 355*, AMO! Zacualpan, *Purpus 10493*, US! Jalacingo, Chiconta, 700 m, 4 XII 1975, *Ventura 12214*, AMO! ENCB! **Oaxaca:** Without data, W-R 9373! Without locality, *Cuming s.n*. G! Ibid. 4000 ft, *Galeotti 5285* BR x2! G! P! W-R x2! In mountibus Oaxaca, *Cuming s.n.*, P! **Chiapas:** N of Berriozabal, 900 m, 21 XI 1972, *Breedlove 29705*, CAS! 7 km NE of Bochil-Simojovel, 1250 m, 22 XI 1972, *Breedlove 29753*, CAS! Berriozabal, 915 m, 4 XII 1986, *Breedlove 66165*, CAS! Simojovel, ca. 1200 m, 6 I 1933, *Plummer sub Öestlund 1863*, AMES x2! S! NE de Berriozabal, col. 15 IV 1989, pressed cult. 22 XI 1990, *Soto 5303*, AMO x2! Ibid. pressed cult. 4 I 1994, *Soto 5303*, AMO! Ibid. pressed cult. 5 XII 1997, *Soto 5304*, AMO! Ibid. pressed cult. 4 XII 1994, *Soto 5303*, AMO! Ibid. pressed cult. 2 IV 1994, *Soto 5306*, AMO! Ibid. pressed

cult. 22 XI 1990, *Soto 5307*, AMO x2! Ibid. pressed cult. 8 XI 1993, *Soto 5307*, AMO x2! Ibid. pressed cult. 4 XII 1994, *Soto 5307*, AMO! Berriozabal-El Cairo (Selva del Ocote), ca. 1050 m, col. 17 IV 1989, pressed cult. 22 XII 1992, *Soto 5363*, AMO! San José de la Montaña, 1210 m, 18 II 1987, *Urquijo 57*, AMO! ICAH! **GUATEMALA: Alta Verapaz:** Finca Mocca, 6 XII 1919, *Johnson 92*, US! Tucurú, 1200 ft, 18 XI 1920, *Johnson 1003*, AMES! **HONDURAS:** El Zamorano, 8 XII 1996, *Linares 4094*, MEXU! **NICARAGUA: Matagalpa:** Tumma Grande (Cerro Matagalpa), 3300 ft, *Heller 1141*, SEL! along hwy 5 ca 12.1 km hwy 3 intersection , ca. 850 m, 15 I 1978, *Stevens 6015*, MO!
OTHER RECORDS: MEXICO: Without locality, *Jiménez s.n.*, color photo, in M. Soto *et al.*, 2007, Orchids of Mexico, Digital Catalogue: fig. 0328, México, Instituto Chinoín. Ibid. 1 X 1976, *Valencia s.n.*, illustration, AMO! **Veracruz:** Coatepec, Pitaya, 10 IX 1976, *Verbeck s.n.*, xerox of illustration, AMO! Bastonal, 15 VII 1973, *Dressler sub Hágsater 3560*, slide, AMO! Huayacocotla-Zontecomatlan, km 30, 5000 ft, 9 XI 1981, *Hágsater 6566*, AMO! (Illustration voucher) **Oaxaca:** Santa Fe y La Mar, Valle Nacional Oaxaca, *Pérez s.n.*, photograph, AMO! **Chiapas:** Without locality, *Bashor 1833*, slide and spirit, AMO! Simojovel, 4650 ft, 6 XII 1966, *Pollard s.n.,* slide and photograph, AMO! Juquila Mixes, 31 XI 1972, *Pollard s.n.*, slide and photograph, AMO! **GUATEMALA: Alta Verapaz:** Tucurú, 1200 ft, 18 IX 1923, *Johnson 1003*, illustration of flower, AMES 24100! **NICARAGUA: Matagalpa:** Finca Milwaukee, 750 m, *Heller 2362*, Xerox of illustration, AMO!

EPIDENDRUM GALEOTTIANUM A.Rich. & Galeotti — Plate 1335

OTHER SPECIMENS: MEXICO: Veracruz: Cordova, 15 V 1866, *Bourgeau 2265*, P x2! Reserva Parque de la Flora y Fauna Silvestre Tropical, 500 m, 24 V 1994, *Carmona 145*, AMO! Mirador, 3000 ft, *Galeotti 124*, AMES (tracing of illustration)! Cordillera, 3000 ft, I 1840, *Galeotti 5194*, W-R! Amatlán de los Reyes Santa, Ana Morelos (La Caldera), 740 m, 19 V 1991, *García s.n.*, CORU! Córdoba, Hort. Calatayud, *Hágsater 1666*, AMO (Illustration) ENCB! Estación de Biología Tropical Los Tuxtlas, rivera Laguna El Zacatal, 200 m, 9 VII 1985, *Hágsater 7977*, AMO! Flowers in spirit AMO! El Mirador, 3000-3800 ft, *Hobenacker s.n.*, W-R! Amatlán de los Reyes Cerro Cruztitlán, 700 m, 11 VIII 1990, *Huerta 45*, CORU! Mirador, *Liebman 55*, US! Fortín de las Flores, 1000 m, 9 VIII 1933, *Oestlund 2119*, AMES x2! F! MEXU! MO! SEL! US! Zacuapan, 900-1000 m, 2 VI 1933, *Oestlund 2442*, AMES! Motzonango, ca. 400 m, 18 X 1933, *Oestlund 2982*, AMES! Coatepec, ca. 800 m, 20 IX 1933, *Oestlund 3096*, US! Tezonapa, 600 m, 16 XII 1935, *Oestlund 3589*, AMES! Zacuapam, *Oestlund 5068*, MEXU! Hidalgotitlán, Camp. Hnos. Cedillo, 150 m 28 V 1975, *Ortíz 184*, MEXU! Ocozotepec, 680 m, 15 VII 1978, *Poole 1481*, MEXU! Zacuapan, 1 XI 1906, *Purpus s.n.*, AMES! Zacuapan, *Purpus 7467*, AMES! UC! Zacuapan, 1 IV 1933, *Purpus 16260*, AMES! Ibid. *Purpus 16308*, AMES! Volcan de Santa Martha, *Salazar 634*, AMO! (Illustration) El Mirador, 950 m, 5 VII 1987, *Salazar 3278*, AMO x2! (Illustration voucher) Barranca de Zacuapam, 900-1000 m, 17 V 1994, *Sánchez 303*, AMO x2! Camp. Hnos. Cedillo, 150 m, 20 IV 1974, *Valdivia 372*, XAL x2! Camp. Hnos. Cedillo, 149 m, 23 IV 1974, *Valdivia 442*, XAL x2! Camp. Hnos. Cedillo, 160 m, 24 V 1974, *Valdivia 699*, MO! XAL! Camp. Hnos. Cedillo, 29 VII 1974, *Valdivia 1156*, XAL! Camp. Hnos. Cedillo, 156 m, 29 VII 1974, *Valdivia 1176*, XAL! Hidalgotitlán, Poblado No.5, 155 m, 21 I 1975, *Valdivia 1802*, XAL! Brecha Hnos. Cedillo-Agustín Melgar, 150 m, 29 V 1974, *Vázquez 695*, MEXU! XAL! Totutla, 800 m, 1 III 1971, *Ventura 3542*, ENCB! **Oaxaca:** Santa María Chimalapa, camino a Río Negro, 125 m, *Rivera 210*, MEXU! **Chiapas:** W side of Laguna Miramar, E of San Quintín, 350 m, 11 II 1973, *Breedlove 33271*, CAS! La Cueva, Reserva del Ocote, 750 m, 29 IV 1983, *Calzada 9748*, XAL! El Diamante, 1 V 1970, *Hágsater 575*, AMO x4! Piedra Parada, 11 IV 1939, *Moore 2552*, AMES! Tapilula, 500 m, *Oberg s.n.,* SEL! Simojovel, 700 m, 21 VIII 1933, *Oestlund 1844*, AMES! El Triunfo, 1900 m, 31 III 1989, *Palacios 1146*, CAS! El Zapotal, 700 m, 11 I 1991, *Palacios 1797*, CAS! Monte Libano-Laguna Ocotalito, 750 m, 18 VI 1986, *Soto 2668*, AMO x2! Berriozabal-El Cairo, (Selva del Ocote), ca. 1050 m, 17 IV 1989, *Soto 5334*, AMO x2! **Campeche:** Jardín Botánico de Zoh, Laguna a 10 Km al N de Xpujil, 200 m, 29 III 1996, *Álvaro 238*, MEXU! Calakmul, S de La Nueva Vida, 265 m, 12 V 2002, *Calónico 23522*, MEXU! Xpujil, 300-400 m, 1 V 1973, *Cochrane 8386*, WIS! Orquidario del "Tormento", Escarcega, 29 V 1996, *Hágsater 11784*, AMO! Ibid. *Hágsater 11785*, AMO! Calakmul, SW de La Ley de Fomento Agropecuario, 250 m, 13 II 1998, *Martínez 30067*, MEXU! W de 16 de Septiembre (Laguna de Alvarado), 198 m, 14 II 1998, *Martínez 30077*, MEXU! Calakmul, La Malancona, 223 m, 21 VIII 2002, *Martínez 35967*, MEXU! Zoolaguna, 150 m, *Sarmiento 25*, AMO! Xpujil, 300-400 m, 1 V 1973, *Shepherd s.n.,* F! Xpujil, 300-400 m, 1 V 1973, *Shepherd 8*, WIS! **Tabasco:** Ejido Benito Juárez-Colorado, 9 V 1996, *Guadarrama 4154*, MEXU! Macuspana, 9 V 1980, *Magaña 2978*, CAS! NY! Cárdenas, 23 VI 1996, *Ortiz 2162*, MEXU x2! **Quintana Roo:** Tres Garantías, 30 IV 1999, *Carnevali 5510*, AMO! Ejido Tres Garantías, 8 V 1985, *Chan 5142*, MO! **BELIZE: Toledo**, Bladen Nature Reserve, Ek Xux, *Davidse 35983*, MO! **El Cayo:** Belize river, 16 II 1938, *Gentle 2190*, MICH! **GUATEMALA: Petén:** Dolores, 14 II 1971, *Tún 1572*, F! **Alta Verapaz:** Chama, 900 m, 8 V 1920, *Johnson 212*, AMES! US! Izabal: Los Andes, ca. 15 ft, *Lewis 38*, AMES! Ibid. *Lewis 39*, AMES! Ibid. *Lewis 50*, AMES! **HONDURAS:** Fincafe, Peña Blanca, 26 V 1978, *Ackerman s.n.*, F! SEL! Ibid. 28 VI 1977, *Ackerman 941*, SEL! **Santa Bárbara:** Cerro Santa Bárbara, 4200 ft, 21 VI 1970, *Barkley 40826*, AMES x3! **Yoro:** Peña Blanca, 10 XII 1946, *Allen 3878*, SEL! **Copán:** Piña creek, El Pinal, 1100 m, 6 IX 1975, *Molina 31138*, F! MO! NY! **Cortés:** Lake Yojoa, 2100 m, 30 VII 1934, *Yuncker 4861*, F! **Comayagua:** Pito Solo, Lago Yojoa, 18 IV 1945, *Valerio 2961*, F! Río Lindo, near Carrizal, 550 m, 12 IV 1951, *Williams 17816*, F! **NICARAGUA: Boaco:** Boaco-Juigalpa, 200 m, 8 II 1983, *Grijalva 2326*, MO!

EPIDENDRUM KLOTZSCHEANUM Rchb.f. — Plate 1343

OTHER SPECIMENS: COLOMBIA: [Antioquia:] Medellín, V 1873, *Patin s.n.*, K-L! Ibid. *Patin s.n.*, W-R 7094! (Illustration voucher). **Cundinamarca:** La Soledad, 3100 m, *Jaramillo 6955*, COL x2! Quetame, Monte Redondo, 2500 m, XI 1975, *Ortiz Valdivieso 789*, HPUJ! Zipaquirá, 3000-3100 m, 22 X 1917, *Pennell 2576*, AMES! NY! Zipaquirá, 12 X 1948, *Romero 1346*, COL! F! US! **Santander:** Vereda Chaguacá, 2880 m, 6 IV 1976, *Torres 668*, COL! **VENEZUELA:** Páramo de los Conisos, *1180*, W-R 4158! **Amazonas:** Cerro Marahuaca, 2700 m, 12 X 1988, *Liesner 24701*, MO! Ibid. 2520-2650 m, 26 II 1985, *Steyermark 130793*, MO! **Anzoátegui:** Cerro Peonía, E of Bergantín, 2350 m, *Steyermark 61699*, F! **Aragua:** Colonia Tovar, 1800-2000 m, XII 1924, *Allart 489*, US! Colonia Tovar, *Fendler 1452*, AMES x2! BR! G x2! K-L x2! MO! W-R x2! Topo de El Cenizo, 2420 m, 8 I 1944, *Fernández 249*, G! US! Colonia Tovar, 2100-2200 m, 26 XII 1921, *Pittier 9986*, AMES! NY! US x2! **Distrito Federal:** Pico Ávila, ca. 2150 m, 12 XII 1959, *Barclay 10171*, AMES! Caracas, *Wagener 117*, W-R 4730! Cult. Sabana Grande, 980 m, XI 1940, *Williams 13670*, F! **Mérida:** Palmira-Timotes, 3000 m, 12 XII 1948, *Renz 4930*, RENZ x3!

Pregonero, Bailadoras nach La Grita, 2700 m, 10 X 1951, *Renz 7450*, RENZ! **Lara/Trujillo:** Páramo de Los Ñepes, ca. 2740 m, 24 XII 1959, *Barclay 10291*, AMES! COL! MO! **Trujillo:** Páramo di Guaramacal, *Taglia 9555*, FI!
OTHER RECORDS: COLOMBIA: Without locality data, *Lansberg s.n.*, sketch of floral parts, W-R 4726! Without locality, *Ortiz Valdivieso s.n.*, photo published in Orquídeas Nativas de Colombia 5: 765, photo 888. Flora de La Real Expedición Botánica del Nuevo Reyno de Granada, *Mutis s.n.*, 9(3): pl. 27, Ed. Cultura Hispánica, Spain, 1985. AMO! **Boyacá:** Chinavita, Mamapacha, 3160 m, IX 2002 *Farfán 118*, digital photo, AMO! **VENEZUELA: Trujillo:** Boconó-Guamacal road, 7000-9000 ft, VIII 1961, *Dunsterville 658*, illustration, K-L!

EPIDENDRUM LAEVE Lindl. Plate 1344

OTHER SPECIMENS: COLOMBIA: Without locality, W-R 49528! Ibid. W-R 49530! Without locality, *Linden 1286*, G! BR! W-R x3! **Antioquia:** Without locality, *Jameson s.n.*, K-L! Ibid. *Lewise s.n.*, K-L! Medellín, II 1931, *Archer 1596*, US! Boquerón de San Cristobal, ca. 2500 m, 2 VI 1948, *Barkley 103*, US! Caldas-Las Minas, 2000 m, 19 X 1947, *Barkley 17C303*, AMES! Boquerón de San Cristóbal, 3 VIII 1965, *Barkley 35413*, AMES x2! La Tumba, Uramita-Peque, 2500-2650 m, 3 IV 1983, *Bernal 549*, COL x2! Caramanta-Supia, 2140-2420 m, 16 X 1988, *Betancur 1088*, MO! Santa Elena, III 1935, *Daniel 1389*, AMES! Piedras Blancas, 2350 m, 23 IX 1995, *Fonnegra 5641*, MO! Medellín-Boquerón-San Jerónimo, 2380 m, col. 22 IV 1983, pressed cult. 12 XI 1984, *Hágsater 7248*, AMO! Ibid. 10 VI 1987, *Hágsater 7248*, AMO! Ibid. 18 V 1991, *Hágsater 7248,* AMO! Ibid. 21 VI 1994, *Hágsater 7248*, AMO x2! Medellín-Boquerón, 2380 m, pressed cult. 28 II 1984, *Hágsater 7249*, AMO! Ibid. 7 V 1985, *Hágsater 7249*, AMO! Cerro del Padre Amaya, pressed cult. 24 VI 1985, *Hágsater 7257*, AMO! Cerro del Padre Amaya, Palmitas, 2150 m, col. 22 IV 1983, pressed cult. 17 VII 1986, *Hágsater 7259*, AMO x2! Urrao, 2000 m, col. 9 VIII 1986, *Hágsater 7301*, AMO! Ibid. 21 VI 1992, *Hágsater 7301*, AMO x3! Caldas-Santa Barbara, 2500 m, 1 XI 1955, *Hatheway 1585*, AMES! Boquerón, Medellín-Palmitas, 2300-2500 m, 12 V 1946, *Hodge 6834*, AMES! Boquerón, Medellín-Palmitas, 2300-2500 m, 22 III 1948, *Johnson 18C480*, US! Santa Helena, Medellín-Rionegro, ca. 2500 m, VIII 1945, *Molina 33*, US! Medellín, 1500 m, *Metcalf 30035*, AMES! Alto El Chuzcal, cultivado en Colomborquídeas, El Retiro, 2400 m, 19 X 1988, *Múnera 236*, AMO! Cerro del Padre Amaya, [Boquerón de Toyo], 8 IV 1968, *Ortiz Valdivieso 80*, HPUJ! El Cedro, 2400 m, 13 VIII 1969, *Ortiz Valdivieso 4057*, HPUJ! Cerro del Padre Amaya, *Ospina 13*, JAUM! San Jerónimo, "Boquerón", 2500 m, 16 VIII 1957, *Ospina 199*, AMES! Piedras Blancas, Medellín-Guarne, 2300-2400 m, *Ospina 201*, JAUM! Quindíu, 10 XII 1887, *Schmidtchen s.n.*, W-R 14053! Sonsón, 20 VII 1928, *Toro 1228*, NY! Salgai, 20 VII 1928, *Toro 1274*, NY! Santa Bárbara, VI 1931, *Tracey 405*, K-L! Medellín, Las Palmas, ca. 2100 m, 11 I 1952, *Uribe 2252*, COL! NY! U! La Ceja, 2500 m, 30 VII 1959, *Uribe 3344*, AMES! MO! Alto de Ventanas, 2700-2790 m, 29 X 1988, *Zarucchi 6921*, MO! **Caldas:** [Tolima] vereda Líbano, Quebrada Negra, 2400 m, 11 VII 1982, *Albert de Escobar 2119*, HUA! Parque Regional Piedras Blancas, ca. 2400 m, *Ospina 415*, JAUM! Manizales, 2400 m, 6 IV 1956, *Renz 8583*, RENZ x2! Manizales-Papayal, 2200 m, 10 IV 1956, *Renz 8637*, RENZ x2! Cerro Tatama, 2600-2800 m, *Pennell 10360*, AMES! Laguneta Salento, 2800 m, 20 IX 1942, *Sneidern 3026 bis*, AMES! S! **Cauca:** Cabeceras del Río Palo, 2700-2800 m, 13 XII 1944, *Cuatrecasas 19194*, AMES x2! MO! NY! US! Paisabamba and Vulcan de Sotará, 2500-2800 m, *Lehmann 6282*, K-L! "Calaguala", Coconuco, 2500-2800 m, 14 VII 1922, *Pennell 7127*, AMES x2! NY! US! **Risaralda:** Pereira, Parque Ucumari, 1900 m, 19 II 1990, *Croat 70783*, COL! Ibid. II 1989, *Franco 2803*, COL! Ibid. 2450-2650 m 24 VII 1989, *Galeano 107*, COL! Ibid. 30 VI 1990, *Galeano 463*, COL! Ibid. 2200-2450 m, 14 VI 1989, *González 1637*, COL! Ibid. 2610 m, 11 X 1989, *Rangel 5417*, COL! Ibid. *Rangel 5475*, COL! **Nariño:** Isla La Corota, 2800 m, 4 II 1986, *Benavídez 6157*, COL! Pasto, 2620 m, 24 I 1976, *Luteyn 4989*, COL! Puruguai, Pasto, 2500 m, *Triana 576*, P! (Illustration voucher) US! Puruguai, 2500 m, 1853, *Triana1371*, COL! P! W-R! **[Quindio:]** Lagunetas, 25 XI 1853, *Holton 178*, K-L! NY! **Tolima:** Herveo, Letras-Padua, ca. 2800 m, 25 VIII 1983, *Albert de Escobar 3607*, MO! Mariquita, Azufral to Machín 1200 m, *Linden 1286*, K-L! Quebrada Cajamarca to "Mermillon", new Quindio Trial, 14 VIII 1922, *Killip 9754*, AMES! US! Toche, 2300 m, 19 V 1942, *Sneidern 3059*, AMES! NY! S! **Valle del Cauca:** Hoya del río Cali, Pichindé, 2160 m, 26 X 1944, *Cuatrecasas 18276*, AMES x2! F! Cali, 1600-2000 m, 16 VIII 1883, *Lehmann 3012*, G! Río Nima, above Tenjo, 1800 m, 2 X 1974, *Mass 1831*, AMES! SEL! U!
OHTER RECORDS: COLOMBIA: Without locality data, published in Orquídeas Nativas de Colombia vol. 2, pg. 175, photo 190. **Antioquia:** Pasando el puerto [del Cerro del Padre Amaya], 2380 m, 19 V 1986, *Escobar 7251*, AMO! Cerro del Padre Amaya [Boquerón de Toyo], IV 1968, *Ortiz Valdivieso 80*, slide and illustration, HPUJ!

EPIDENDRUM LAUCHEANUM Rolfe ex Bonhof Plate 1346

OTHER SPECIMENS: MÉXICO: Veracruz: Coatepec Viejo-Cieneguilla, 30 VIII 1987, *Cházaro 4972*, IBUG! XAL! faldas del Cofre de Perote, pressed cult. 19 X 1976, *Hágsater 3974*, AMO(x3)! (illustration, AMO!) Santa Marta, 1200 m, 15 III 1968, *Sousa 3580*, MEXU! **Oaxaca:** Juquila-Ocotepec, 1650 m, col. 3 III 1996, pressed cult. 11 IX 1998, *Jiménez 1767,* AMO(x4)! Ibid. pressed cult. 8 X 1999, *Jiménez 1767,* AMO(x3)! km 25.1 Huautla-Tuxtepec, 4500 ft, 16 IX 1981, *Hágsater 6121*, AMO! (illustration of flower) Ibid. pressed cult. 4 IX 1983, *Hágsater 6121*, AMO(x3)! Ibid. pressed cult. 25 IX 1984, *Hágsater 6121*, AMO(x2)! Ibid. 25 X 1985, *Hágsater 6121*, AMO! Juquila Mixes, 11 V 1969, *Stubblefield 1-190*, MEXU! **Chiapas:** El Porvenir-Siltepec, 2100 m, 27 VII 1972, *Breedlove 25713*, CAS! San Cristóbal de las Casas, 2200 m, 2 IX 1974, *Breedlove 37109*, CAS! El Triunfo-El Derrumbe, 2000 m, 3 VIII 1997, *Castillo 1473*, AMO! Palo Gordo-El Triunfo, 2200 m, 8 IV 1998, *Castillo 1742*, AMO! El Triunfo, 2100 m, 21 XI 1990, *Heath 1329*, AMO! Cerro Mozotal, 2200 m, 11 II 1987, *Martínez 20016*, CICY! F! MEXU! MO! Mazapa, 1200 m, 19 VII 1941, *Matuda 28549,* MEXU! La Trinitaria, 1450 m, *Monzón 6737*, F! Pueblo Nuevo Solistahuacán, 2100 m, 19 VIII 1986, *Palacios 164*, AMO! Ibid. 6500 ft, 25 I 1965, *Raven 19982*, AMES! CAS! F! Ibid. 1850-2150 m, 15 II 1990, *Reyes 1667*, MEXU! Acacoyagua, El Triunfo, 520 m, 12 III 1998, *Santana 613*, AMO! Huixtla-Motozintla, 2000-2300 m, col. 16 IX 1985, pressed cult. 4 XI 1986, *Soto 1859*, AMO! Ibid. *Soto 1927*, AMO! Ibid. ca. Buenos Aires, 2000 m, col. 17 VI 1987, pressed cult. 22 VIII 1990, *Soto 3412*, AMO(x3)! Pueblo Nuevo Solistahuacán, 6700 ft, 21 VIII 1970, *Zuill 288*, CAS! **GUATEMALA:** Without locality data, pressed cult. 3 IX 1978, *Hágsater 5376*, AMO! **Guatemala:** Puerto Pancho, Santa Catarina Pimche, 1850 m, pressed cult. 4 IX 1983, *Hágsater 5348*, AMO x6! Ibid. 19 IX 1986, *Hágsater 5348*, AMO x4! **Alta Verapaz:** Without data locality, *Tuerckheim s.n.* L! Tactic, road

Tamahú, 1500-1600 m, 1 IV 1941, *Standley 91486*, F! Ibid. *Standley 91499*, F! Cobán, 1530 m, VII 1912, *Tuerckheim 2478*, AMES(x6)! G! M! U(x2)! US! (Illustration of flower, AMO!) W-R! **[Escuintla:]** Volcán Pacaya, 15 VIII 1974, *Dix s.n.,* USCG! Volcano Pacaya, 2200 m, 23 VIII 1970, *Harmon 4174*, ENCB! Volcán Pacaya, 8000 ft, 20 VIII 1938, *Porter 62*, AMES! **Jalapa:** Road to Mataquescuintla, ca. 6000 ft, 29 VIII 1935, *Ward 128*, AMES! **[Jutiapa:]** Volcán Suchitan, 18 XI 1939, *Steyermark 31899*, AMES! F! **EL SALVADOR:** Ahuachapán: Laguna de las Ranas, 1950 m, 29 VII 1958, *Weberling 2499*, M! **Chalatenango:** Cerro El Pital, 2300 m, 26 I 1971, *Hamer 77*, AMES! **San Salvador:** Vulcano San Vicente, 2000 m, 1 V 1959, *Hamer 77*, AMES! **HONDURAS:** *Bates 52*, AMES! **Francisco Morazán:** Tegucigalpa, San Jacinto [Juancito], 6000 ft, 16 VIII 1931, *Edwards 38*, AMES! Ibid. El Guante, 3000 ft, 18 IX 1931, *Edwards 40*, AMES! Ibid. *Edwards 41*, AMES! Santa Elena, 950 m, 3 IX 1996, *Linares 3473*, MEXU! Mount Uyuca, VIII 1960, *Pfeifer 1817*, US! Near Rancho Quemado, San Jacinto Mountains, 1900 m, 29 IX 1951, *Williams 18593*, F! US! **Intibucá:** Área Cordillera Opalaca, road to La Esperanza, 2000 m, 3 IX 1968, *Molina 22623*, F! **NICARAGUA: Estelí:** Cerro Quiabú, 1600 m, 13 VIII 1976, *Bockus 7745*, SEL! Ibid. NE de Estelí, 1500-1604 m, 19 X 1979, *Grijalva 659*, MO! Ibid. 1604 m, 14 I 1981, *Moreno 6063*, MO! SEL! **Granada:** Volcán Mombacho, 1100-1200 m, 19 III 1977, *Croat 39083*, MO! Ibid. 700-1000 m, 7 I 1983, *Grijalva 2062*, MO! Finca el Progreso, 800-1000 m, 26 IX 1976, *Neill 889*, MO! SEL(x2)! Volcán Mombacho, 1000-1100 m, 26 II 1982, *Moreno 15528*, MO! **Jinotega:** Fuente Pura, Matagalpa-Jinotega, ca. 1400-1450 m, 26 VIII 1982, *Moreno 17062*, MO! Aranjuez, ca. 1360-1380 m, 14 I 1978, *Stevens 5948*, MO! Santa Lastenia, 1500 m, 9 VII 1981, *Zeledón 43*, MO! **Managua:** Sierra de Managua, Instituto Pedagógico de Varones, *Garnier 4508*, AMES! **Matagalpa:** El Arenal, 1400 m, 25 VI 1981, *Moreno 9585*, MO! **COSTA RICA:** Without locality, *Endres 48*, W-R x2! Ibid. *Lankester s.n.*, BM! Ibid. 25 II 1925, *Lankester s.n.*, K-L! Ibid. cult. Hort. K-L, 17 IV 1923, *Lankester 192*, AMES! K-L x2! Ibid. *Valerio 179*, AMES! Jaular, 2000 m, X 1937, *Valerio 2402*, AMES! **Alajuela:** Without locality, 21 X 1935, *Jiménez sub Brenes s.n.*, NY! Ibid. *Brenes 1037*, NY! Poás, 6500 ft, 6 II 1940, *F.W.H 16585*, AMES! La Palma de San Ramón, 21 VII 1924, *Brenes 967*, NY! Ibid. 8 VIII 1924, *Brenes 974,* NY! Ibid. 1150 m, 11 VIII 1925, *Brenes (198)1392,* AMES! Ibid. 1100-1150 m, 24 X 1926, *Brenes (53)1534*, F! Ibid. *Brenes (12B)1685*, F! Ibid. 1150 m, 28 VIII 1924, *Brenes (167)2279*, CR! Ibid. *Brenes 2685*, CR! Road to Volcán Poás, 1900 m, 7 III 1984, *Chase 84336*, CR x2! La Palma, 1400-1550 m, 16 X 1959, *Horich s.n.*, K-L! MO! UC! US! Río Gorrión, 1600 m, 3 IX 1972, *Lent 2823*, F! MO! (flower illustration). Palmira, 5800 ft, *Smith 268*, F! Ibid. 2200 m, *Smith H1091*, AMES! K-L! SEL! Ibid. 2000 m, 14 IX 1938, *Smith 1194*, AMES! F! NY! **Cartago:** El Tablazo, 18 X 1935, *Brade 309*, AMES! Cerro de La Carpintera, ca. 1800 m, 22 VIII 1940*, Chrysler 5538*, AMES! Tablazo, 5 VII 1975, *Durkee 75-52,* F! San Cristóbal, 1880 m, 30 VII 1983, *Escobar 3136*, SEL! S de Cartago, pressed cult 4 IX 1983, *Hágsater 6671*, AMO! (illustration, AMO!) Ibid. 7 X 1985, *Hágsater 6671*, AMO x2! Ibid. 18 IX 1986, *Hágsater 6671*, AMO! CR! La Carpintera, Tres Ríos, 1500 m, 12 X 1990, *Jiménez 913*, AMO! MO! Cascajal, *Lankester K 365*, AMES x2! K-L! La Carpintera, 5300-6000 ft, 4 IX 1923, *Lankester 513*, AMES x2! Talamanca, 2500-3000 m, 15 I 1964, *Lems s.n.*, NY! Cordillera de Talamanca, 2500-3000 m, 15 I 1964, *Lems 1*, US! Tobosí-Frailes, 1700 m, 10 IX 1967, *Lent 1278*, CR! F! NY! U! Empalme, ca. 1900 m, 14 IX 1979, *Luer 4152*, SEL! La Carpintera, IX 1976, *Ocampo 1315*, CR! Patio de Agua, 20 VIII 1943, *Solís 587(14)*, F! Cerro de la Carpintera, 1500-1850 m, II 1924, *Standley 34293*, MICH! US! Ibid. *Standley 34370*, AMES! Ibid. *Standley 34480*, AMES! Ibid. 5600 ft, 7 III 1928, *Stork 1159*, AMES! MO! Alto de Ochomogo, XII 1896, *Tonduz 10388*, BR! SE of Desamparados, 1800-1900 m, 5 IX 1975, *Utley 3030*, F! MO! El Tablazo, 1800 m, 27 VII 1927, *Valerio 20*, US! La Sierra, 2000 m, 23 I 1965, *Williams 28161*, AMES! F! NY! **Guanacaste:** Río Negro de Tilarán, San Bosco, 1400-1500 m, 4 X 1985, *Bello 3003*, MO! SEL! La Cruz de Abangares, 1400 m, 24 IX 1985, *Haber 2887*, MO! Monteverde, 1300 m, *Haber 8693*, AMO x2! MEXU! MO! USJ! **Heredia:** Cerro de Zurquí, 1600-1800 m, 21 X 1975, *Burger 9344*, F! Ibid. *Burger 9346*, CR! F! Ibid. 6 II 1977, *Burger 10273*, AAU! CR! F! Vara Blanca, 1900 m, 11 XI 1951, *León 3066*, USJ! above San Jerónimo, ca. 1800 m, 18 IX 1979, *Luer 4212*, SEL! Vara Blanca, 2000 m, 25 XII 1931, *Kupper 259*, M(x2)! Poás and Barba volcanoes, 1800 m, I 1938, *Skutch 3409*, AMES! K-L! MO! NY! S! US(x2)! Yerba Buena, ca. 2000 m, *Standley 49992*, AMES! US! Cerros de Zurquí, 2000-2400 m, 3 III 1926, *Standley 50306*, AMES! US! Ibid. *Standley 50425*, AMES! Cerro de Las Lajas, 2000-2400 m, 7 III 1926, *Standley 51440*, AMES **Puntarenas:** Monteverde, 1575 m, 2 III 1989, *Atwood 89-14*, SEL! Sendero Chomogo, 1600-1700 m, 6 III 1989, *Atwood 89-30,* SEL! Arancibia de Miramar, 1600 m, 5 X 1989, *Bello 1343*, MO! Monteverde, 1580 m, 15 VII 1983, *Escobar 3019*, SEL! Ibid. 1550 m, 25 IX 1985, *Haber 2763*, MO! Ibid. 1550 m, 25 IX 1985, *Haber 2765*, SEL! Ibid. 1550 m, 25 IX 1985, *Haber 2769*, MEXU! Ibid. 1550 m, 25 IX 1985, *Haber 2795*, MEXU! MO! SEL! Monteverde, sitio 17, 1460 m, col. 25 I 1988, pressed cult. 2 XII 1990, *Hágsater 9424*, AMO! Ibid. Sapo Dorado,1550 m, 25 I 1988, *Hágsater 9445*, AMO! Ibid. Lima de Tilarán, 4500 ft, 9 II 1959, *Palmer 30*, CR! NY! **San José:** San Ignacio de Aserrí, 1150 m, 12 IX 1925, *Alfaro 178*, AMES x2! US! Ibid. *Alfaro 179*, AMES x2! US! Cultivado en San José, 27 VIII 1936, *Brade 364*, CR! Cerro Daser (Fila Cedral), 2000 m, 30 VIII 1971, *Burger 8173*, F! NY! Cerros de Zurquí, 1600-1800 m, 6 II 1977, *Burger 10273,* CR! Braulio Carrillo National Park, 1355 m, 1 IX 1996, *Croat 78793*, MO! San Jerónimo-Parque Braulio Carrillo, 13 X 1984, *Dressler 78*, USJ! Tablazo, *Endres 384*, W-R x3! Tarbaca, río Tigre, 1750 m, 26 IX 1996, *García-Cruz 922*, AMO x5! Ibid. pressed cult. 25 VIII 1997, *García-Cruz 922*, AMO! Ibid. 21 VIII 1998, *García-Cruz 922*, AMO x2! Ibid. col. 26 IX 1996, *García-Cruz 923,* AMO x3! Ibid. pressed cult. 25 VIII 1997, *García-Cruz 923*, AMO! Ibid. 3 VIII 2000, *García-Cruz 923*, AMO! Zurquí, 1800 m, 18 X 1969, *Gómez 2416*, F! Caraigres, El Empalme, 3 I 1992, *Grant 92-01658*, SEL! Hacienda La Lucha, 1800 m, 25 III 1981, *Hágsater 6351*, AMO! Ibid. pressed cult. 12 X 1982, *Hágsater 6351*, AMO! (Illustration voucher). Ibid. 25 IX 1983, *Hágsater 6351*, AMO x3! Ibid. 19 IX 1984, *Hágsater 6351,* AMO! S de Cartago, 10 X 1983, *Hágsater 6685*, AMO x3! (illustration of flower) Ibid. 14 VIII 1986, *Hágsater 6685*, AMO! USJ! Ibid. 26 IX 1986, *Hágsater 6685*, AMO x4! Ibid. 29 IX 1988, *Hágsater 6685*, AMO x7! Fila del Cedral, Cerro Daser, pressed cult. 25 IX 1983, *Hágsater 6785*, AMO! Ibid. 19 IX 1984, *Hágsater 6785*, AMO! Ibid. 18 IX 1986, *Hágsater 6785*, AMO x2! Ibid. 1 IX 1982, *Hágsater 6787*, AMO! (illustration, AMO). Ibid. col. 20 III 1982, pressed cult. 25 IX 1983, *Hágsater 6844*, AMO! Ibid. 23 XI 1992, *Hágsater 6844*, AMO! Cerro el Cedral, 1800-2400 m, 2 II 1962, *Horich s.n.*, K-L! Zurquí Station, 1600 m, 20 IX 1990, *Ingram 538*, SEL! Ibid. 1650 m, 25 X 1990, *Ingram 629*, F! MO! SEL! San Cristobal, 5000-8000 ft, 12 I 1923, *Lankester 386*, AMES! La Palma, 1500 m, 27 XII 1881, *Lehmann 1228*, BM! G x6! Río Hondura, Alto La Palma, 1560 m, *Lent 1335*, 1 X 1967, AMES! F! US! Alto Hierbabuena, 2000-2100 m, 5 X 2003, *Morales 10013*, INB! Jericó de Desamparados, 1470 m, *Ossenbach 389*, USJ! La Palma, 1600 m, 3 II 1924, *Standley 32917*, AMES! US! Ibid. *Standley 32961*, AMES! Ibid. 3 XI 1924, *Standley 33085*, AMES! Ibid. 3 II 1924, *Standley 33153*, AMES! US! Aserrí-Tarbaca, 1600-1900 m, 12 II 1924, *Standley 34147*, US! Zurquí, 2000-2500 m, 13 II 1926, *Standley 48184*, AMES! US! Ibid. *Standley 48200*, AMES! Ibid. *Standley 48310*, AMES! Tarbaca, 1860-1880 m, 26 VIII 1979, *Stevens 13690*, ENCB! F! MO! El Tejar, 2000 m, 20 VIII 1967, *Taylor 4618*, NY! San Jerónimo,1400-1500 m, 15 X 1974, *Utley 1275*, F x2! La Palma de San José, 19 IX 1932, *Valerio 151*, AMES! Tarbaca, 1700-1800 m, 7 IX 1979, *Walter 79382*, CR! San Isidro del

General, 1800 m, 12 V 1956, *Williams 19930*, SEL! **Limón:** Guápiles, 1830 m, 14 X 1950, *Allen 5692*, AMES! AMO! (illustration of flower) BM! F! SEL! US! **PANAMÁ: Chiriquí:** Without locality, *Dressler 311*, Herb. Dressler! Cerro Colorado, 19 IX 1977, *Dressler 5704*, AMO! Volcán Chiriquí, pressed cult. 6 III 1985, *Maduro sub Hágsater 6436*, AMO! Ibid. pressed cult. 7 X 1985, *Hágsater 6436*, AMO!
OTHER RECORDS: Without locality, 8 VII 1994, *Chiron s.n.*, slide, AMO! Ibid. 20 IV 1923, *Snelling s.n.*, illustration published in Bot. Mag. 148: t. 8996. 1924. **MEXICO:** Without locality, flower, cult. 28 VIII 2007, *Soto 10899*, Hort. AMO! **Chiapas:** Without locality, 29 VIII 1990, *Greenwood 1488*, slide, AMO! Puesto de Viento, XII 1966, *McCullough s.n.*, note, AMO! **GUATEMALA:** Santa Catarina Pimche, 1850 m, 2 IX 1983, *Hágsater 5348*, illustration, AMO! **NICARAGUA: Jinotega:** Rock Quarry, 1300 m, *Heller 8641*, xerox of illustration by Hamer, AMO! **COSTA RICA:** Without locality, 28 XI 1970, ***McCullough s.n.***, slide, AMO! Ibid. 14 X 1962, *Rodríguez 20*, xerox of illustration, AMO! **Cartago:** Cascajal, *Lankester K 365*, flower illustration, AMES x3! Macizo de la Muerte (Hort. Jardín Botánico Lankester), 1550 m, 26 IX 2002, photographed 19 IX 2003, *Pupulin 4179*, photo published in Vanishing Beauty: Native Costa Rican Orchids 1: 306. 2005. **San José:** Desamparados, San Cristobal Norte, (Hort. Gaia Botanical Garden) 1700-1800 m, 28 IX 2002, photographed 17 XII 2003, *Morales s.n.*, photo published in Vanishing Beauty: Native Costa Rican Orchids 1: 306. 2005.

EPIDENDRUM LINDAE Hágsater & Dodson — Plate 1348

OTHER SPECIMENS: COLOMBIA: Antioquia: Frontino, Nutibara, Río Cuevas, 1780 m, 23 IX 1987, *Sánchez 1601*, COL! **Cauca:** P. N. Munchique, ca. 1850 m, 5 V 1984, *Albert de Escobar 4367*, HUA x2! Ibid. *Albert de Escobar 4376*, HUA! MO! NY! P. N. Munchique, 2385 m, 26 VII 1993, *Barbosa 8579*, COL x2! **Chocó:** San José del Palmar, hacia el Galápago, 1610 m, 11 XI 1985, *Lozano 4925*, COL! **Putumayo:** El Mirador-El Pepino, 1000-1900 m, 3 VIII 1961, *Fernández 5856*, COL! Mocoa-Pasto, ca. 1600 m, 29 VI 1971, *Ortiz 508*, HPUJ! (xerox of illustration, AMO!) Sibundoy-Mocoa, 2200 m, 5 I 1957, *Ospina 101*, AMES! COL! **ECUADOR: Carchi:** Cerro Golondrinas, 2850-2860 m, 24 VII 1993, *Boyle 2300*, MO! QCNE! Maldonado-Tulcán, 2040 m, 1 V 1993, *Hágsater 11331*, AMES! AMO! COL! MO! QCNE! **Napo:** Cordillera de Guacamayo, 1900-2100 m, 17 I 1990, *Dodson 18200*, MO! QCNE! Baeza-Tena, 2230-2250 m, 13 IV 1992, *Oellgaard 99906*, QCA! QCNE! **Pichincha:** Nono-Tandayapa, 2580 m, 14 V 1981, *Dodson 10724*, MO! QCNE! SEL! US! Quito, *Jameson s.n.*, W-R 14163! **Sucumbios:** Reserva Ecológica Cayambe-Coca, El Reventador, 3400 m, 22 XI 1997, *Clark 4433*, QCNE! Ibid. 1700 m, 13 VIII 1999, *Vargas 3989*, QCNE!
OTHER RECORDS: COLOMBIA: Cauca: P. N. Munchique, 2400 m, received 26 VI 2000, *Salgado 121*, digital image, AMO! **Putumayo:** San Francisco-Mocoa, 2500 m, *Medina 644*, digital image, AMO!

EPIDENDRUM LONGICOLLE Lindl. — Plate 1350

OTHER SPECIMENS: Without data, W-R 42397! Ibid. *Spruce 237*, W-R! **COLOMBIA:** Without locality, cult. Cali, XI 1984, *Ortiz s.n.*, HPUJ! **Norte de Santander:** La Motilonia, 40-50 m, 15 V 1965, *García-Barriga 18380*, COL! **Amazonas:** Without locality, *Ortiz s.n.*, HPUJ! P. N. Amacayacu, Boca del Río Amacayu, 14 VI 1992, *Rueda 527*, MO! Tarapacá, P. N. N. Amacayu; Río Cotuhé, 100 m, 19 VI 1991, *Rudas 2164*, MO! Tarapacá, P. N. N. Amacayu; Caño Lorena, 100 m, 21 VI 1991, *Rudas 2294*, MO! Tarapacá, P. N. N. Amacayu; Río Cotuhé, 100 m, 29 VI 1991, *Rudas 2649*, MO! Río Caraparaná, ca. 150 m, 22 V 1942, *Schultes 3845*, AMES! F! K-L x3! NY x2! Río Miritiparaná, Caño Guacayá, 700 ft, 24 IV 1952, *Schultes 16244*, AMES! Isla Mariname, río Caquetá, 10 III 1989, *Urrego 235*, JAUM! **Vaupés:** Río Kuduyarí, Mitú, 10 ft, 12 VIII 1960, *Garay 85*, AMES! (pro parte plant on the left). Río Kuduyarí, ca. 300 m, 23 VI 1958, *García-Barriga 15778*, AMES x5! (specimen AMES 115071 is a mixed Collection, the specimen on the right; specimen on left is *Epidendrum minus* (Cogn.) Hágsater). Río Apaporis, Raudal de Jirijirimo, ca. 900 ft, 15 III 1952, *Schultes 15948*, AMES! Río Vaupés, Mitú-Javareté, Tipiacá; Murutingá, 14 V 1953, *Schultes 19298B*, AMES! Mitu, Río Kubiyu, 25 IV 1975, *Zarucchi 1275*, AMES! COL! **Vaupés-Amazonas:** Río Apaporis, Cachivera de Jirijirimo, ca. 250 m, 12 VI 1961, *Schultes 12429*, AMES x4! **PERU: Loreto:** Without locality, *Moore 180*, AMES x2! Maynas, Río Yaguasyacu, 7 XI 1977, *Gentry 20502*, F! USM! Maynas, Río Napo below Mazan, 140 m, 8 XI 1979, *Gentry 27725*, MO! Maynas, Yanamono, Indiana-mouth of Río Napo, 120 m, 28 VII 1980, *Gentry 29217*, MO! Maynas, Río Santa María, ca. 100 m, 6 V 1982, *King 403*, F! NY! Mishuyacu, 100 m, IV 1930, *Klug 1179*, F! NY! Ibid. V 1930, *Klug 1404*, F! NY! US! Iquitos, 100 m, 1 XI 1936, *Klug 10004*, AMES! US! Iquitos, 100 m, I 1937, *Klug 10068*, AMES! US! Iquitos, Bombonaje, 23 V 1973, *McDaniel 17223*, NY! (Illustration voucher). Jenaro Herrera, Río Ucayali, 1 I 1984, *Mejia 293*, F! lower rio Ampiyacu, 6 III 1977, *Prance 24677*, NY! USM! Río Amazonas, 10m km de Pebas, 10 V 1976, *Revilla 492*, F! MO! USM! Iquitos-Nauta, 120-150 m, Río Itaya, 30 XI 1987, *Rimachi 8446*, MO! Nina Rumi (Río Nanay), 16 VII 1984, *Vásquez 5259*, MO! Maynas, Quebrada Sucusari, 140 m, 13 IV 1991, *Vásquez 15956*, MO! Maynas, Quebrada Sucusari, 140 m, 18 IV 1991, *Vásquez 16146*, MO! Río Ampiyacu, Pucurillo, 8 III 1981, *Wade 790a*, F x2! SEL! USM! Puerto Almendras, 130 m, 28 VII 1988, *Werff 9826*, F! MO! **Cusco:** Pan de Azucar and Quince Mil Airport, 643 m, 10 VIII 1991, *Nuñez 14062*, MO! USM! **TRINIDAD & TOBAGO:** Aripo Savanna, 14 IV 1921, *Britton 2938*, NY! Mora Forest via Sangre Grande, 9 IV 1926, *Broadway 6093*, K-L! Salibra-Matura, cult. at ZCTA, 400 ft, 1 X 1958, *Herklots 15695*, AMES! **VENEZUELA:** Río Amacuro, Sierra Imataca, 65-80 m, 7 XI 1960, *Steyermark 87334*, MO! NY! **[Delta Amacuro]:** Pedernales, Caño Simoina, W of Isla Cocuina, 50 m, 8 X 1977, *Steyermark 114376*, MO! **Bolivar:** El Paují, 800-900 m, 7 XI 1985, *Liesner 19660*, MO! El Paují, 750-900 m, 12 XI 1985, *Liesner 19984*, MO! Chimantá Massif, Techiné-merú, 470 m, 16 I 1955, *Steyermark 110*, AMES! NY! Sierra Imataca, Río Toro, 200-250 m, 14 XII 1960, *Steyermark 88040,* NY! **Amazonas:** Cerro Marahuaca, 1200 m, 19 X 1988, *Liesner 25078*, MO! **GUYANA:** Kaieteur falls, 23 X 1923, *De La Cruz 4468*, AMES! NY! US! Amakura River, 17 I 1920, *Hitchcock 17645*, AMESx2! Kurupung Sacoba, 19 XI 1922, *Lang 163*, F! **FRENCH GUYANA: Cayenne:** Montagne Bellevue de l'Inini, 650-700 m, 25 VIII 1985, *Granville 7815*, CAY! Oyapock, St. Georges, 20 X 1979, *Veyret 1673*, CAY! **BRASIL: Amazonas:** Amazonas ad Panure, *Spruce 2943*, K-L! W-R.
OTHER RECORDS: without locality: Illustration, Bot. Mag. 71: t. 4165. 1845. **COLOMBIA: Valle del Cauca:** Hort. Toro, al N de Cali, supuestamente de la zona, *Becerra s.n.*,Photo CD Galería de Orquídeas de Colombia, Ortiz, 2007. [The cultivated plant is doubtful from this area in southern Colombia, its known range is from the Amazon Basin]. **PERU: Loreto:** Iquitos, *Fernández s.n.*, Photo AMO!

EPIDENDRUM MACROCLINIUM Hágsater Plate 1353

OTHER SPECIMENS: MÉXICO: Veracruz: Laguna El Zacatal, 200 m, 9 VII 1985, *Aguirre sub Hágsater 7984*, AMO! límites de Veracruz con Tabasco, 20 m, 18 V 1980, *Calzada 6099*, XAL! Estación de Biología Los Tuxtlas, 170-200 m, 28 V 1981, *Gentry 32385*, MO! Río Soloxuchil, 152 m, *Ponce 253*, MEXU! Camp. Hnos. Cedillo, 149 m, 14 IV 1974, *Valdivia 296*, XAL! Ibid. rumbo a la Laguna, 160 m, 21 V 1974, *Valdivia 540*, XAL x3! Río Soloxuchil, 150 m, 4 IV 1974, *Vázquez 383*, MEXU! MO! XAL! Brecha Hnos. Cedillo-La Escuadra, 150 m, 3 VI 1974, *Vázquez V-773*, MEXU! Nanchital, Puerto México, *Viereck s.n.*, AMES! **Chiapas:** S de Nuevo Guerrero, 380 m, 27 V 2002, *Aguilar 1175*, MEXU! San Javier, 295 m, 24 VIII 2002, *Aguilar 2132*, MEXU! Ibid. 19 VIII 2002, *Aguilar 2198*, MEXU! Ibid. 390 m, 9 X 2002, *Aguilar 3184*, MEXU! Ibid. *Aguilar 3209*, MEXU! crucero San Javier, 354 m, 26 II 2002, *Aguilar 4403*, MEXU! San Javier, 342 m, 13 II 2003, *Aguilar 5646*, MEXU! crucero San Javier, 356 m, 24 XI 2002, *Álvarez 2575*, MEXU! Ibid. *Álvarez 2611*, MEXU! Ibid. *Álvarez 2620*, MEXU! crucero San Javier, 617 m, 25 XI 2002, *Álvarez 2699*, MEXU! crucero San Javier, 327 m, 13 II 2003, *Álvarez 3820*, MEXU! Palenque, 300 m, 27 VII 1978, *Breedlove 26603*, DH! Bonampak at the Río Lacanjá, 350 m, 14 V 1982, *Davidse 20480*, MEXU! Crucero Corozal, 180 m, 19 IX 1984, *Martínez 7574*, MEXU! Ibid. 23 II 1985, *Martínez 11099*, MEXU! Ibid. 15 IX 1985, *Matrínez 13870*, MEXU! Ibid. 6 XI 1985, *Martínez 14901-A*, MEXU! Ibid. 6 XI 1985, *Martínez 14905,* MEXU! Ibid. 8 I 1986, *Martínez 15665*, MEXU! NW del crucero Corozal, 300 m, 9 I 1986, *Martínez 15799*, MEXU! Ibid. 180 m, 16 I 1986, *Martínez 16322*, AMO! MEXU! MO! Ojo de Agua de San Javier, 370 m, 29 I 1986, *Martínez 16888*, MEXU! San Javier, 440 m, 13 VIII 2002, *Martínez 35692*, MEXU! **BELIZE: Cayo:** Rio de la Flor, Grano de Oro, 1700-2000 ft, 3 VI 1973, *Croat 23772*, MO! **Toledo:** San Jose, 12 VI 1973, *Croat s.n.*, MO! Río Grande, *Gentle 4878,* LL! **GUATEMALA: Alta Verapaz:** Río Icbolay, 300-350 m, 6 III 1942, *Steyermark 44722*, F! Cubilguitz, 350 m, X 1901, *Tuerckheim 8295*, US! photo AMES! **Izabal:** Los Andes, Entre Ríos, *Lewis 138*, AMES! El Estor, 2 m, 16 VIII 1988, *Martínez 22792*, MEXU! Río Juyamá, 50-100 m, 8 IV 1940, *Steyermark 39164*, F! Río Bonita, 30-150 m, 21 XII 1941, *Steyermark 41742*, AMES! F! **Petén:** Tikal, 5 XI 1960, *Contreras 1480*, LL! Julec, 26 VII 1961, *Contreras 2661,* LL! Petén, 14 VII 1959, *Lundell 16454*, LL! **NICARAGUA: Granada:** Volcán Mombacho, 3850 ft, *Heller 8904*, SEL **COSTA RICA:** Boruca, 11 XII 1972, *Ocampo 213*, CR! Costa Rica or Central America, 3 II 1976, *Weaver OIC#0213*, SEL! **Heredia:** La Selva, 4 X 1985, *Atwood Jr. 85-111*, SEL! **Limón:** San Miguel de Sixaola, 40 m, 3 III 1999, *Alfaro 2079*, INB! Río Parismina, 50 ft, *Lankester 363*, AMES! **PANAMÁ: Bocas del Toro:** Almirante, 30 m, 22 I 1971, *Dressler 3922,* Herb. Dressler! Chiriquí Lagoon, 9 X 1940, *Wedel 1126*, AMES! US! **Panamá:** Cerro Jefe, 13 VIII 1970, *Dressler 3885*, Herb. Dressler!

OTHER RECORDS: MÉXICO: Chiapas: Palenque, 1500 ft, *Bashor 2073*, slide of white flower, AMO! Agua Azul, *Lamas sub Hágsater 4720*, spirit, AMO! (Illustration voucher) MEXU! Chancalá-Cintalapa, 600 m, 20 II 1977, *Thurston 1385*, slide, AMO! Chancalá, 600 m, 31 X 1977, *Thurston 1817*, note, AMO! Ibid. 600-1500 m, 31 X 1977, *Thurston 1856*, note, AMO! Ibid. 600-1500 m, 31 X 1977, *Thurston 1952*, note, AMO! **NICARAGUA: Granada:** Volcán Mombacho, 3850 ft, *Heller 8904*, illustration and personal notes, SEL!, xerox AMO! **COSTA RICA:** Without locality, Hort. Selby Bot. Gard. *Hall s.n.*, illustration by *Hágsater,* 4 IV 1977, AMO! **Cartago.** Cañon del Río Birris, ca. 1000 m, VI 1981, *Horich s.n.*, photo, AMO! **Puntarenas:** Quebrada Arroyo, 150 m, 1 VIII 2000, photographed 8 XII 2000, *Castelfranco 1*, color photo, (published in Hágsater, 2005). **PANAMÁ:** Without locality data, *Dressler sub Brieger s.n.*, xerox of illustration, K-L! **COLOMBIA: Chocó:** Bahía Solano, sea level, *Misas s.n.*, illustration and color photo, (published in Misas, 2005)

EPIDENDRUM MINUS (Cogn.)Hágsater Plate 1358

OTHER SPECIMENS: COLOMBIA: Amazonas: Leticia, Río Igara-Parana (afl. Río Putumayo), corr La Chorrera, territoire des indiens WITOTO Jitomagaro (17 km en avant de La Chorrera), 14 VI 1974, *Sastré 3354*, P! Río Caquetá, La Pedrera, 15 VII 1948, *Schultes 10214*, AMES! **Amazonas-Vaupés:** Río Apaporis; Cachivera de Jirijirimo, ca. 250 m, 11 VI 1951, *Schultes 12387*, AMES! Amazonas-Vaupés, Río Apaporis; entre el Río Pacoa y el Río Kanamarí, Saratama, ca. 250 m, 1 IX 1951, *Schultes 13845*, AMES! Amazonas-Vaupés, Río Apaporis; Raudal Yaya copi (La Playa), ca. 500 ft, 15 II 1952, *Schultes 15381*, AMES! **SURINAM:** Marataka river, 8 IV 1951, *Florschütz 2023*, U! **BRAZIL:** Without locality, *Löfgren s.n.*, SP! **Amapá:** Río Jari, Cachoeiras das Aurucuopatari, ca. 120 m, 17 VIII 1961, *Egler 46464*, MG! **Amazonas:** Humayta Basin of Río Madeira. Between Monte Christo and Santa Victoria on Río Ipixuna, *Krukoff 7251*, AMES x2! BM! BR! F! FLAS! G x3! LE! NY! RB! S! U! (Illustration voucher) US x2! Humayta, near Livramento on Río Livramento, 12 XI 1934, *Krukoff 7307*, AMES x2! G! MO! NY! S! U! Amazonas: Tabatinga, Río Solimoes, Igarape Preto, near Belem (ca 75 km upstream from Leticia), 1 III 1977, *Mori 9193*, NY! Margin of Igapó, Manaus-Porto Velho road, 16 III 1974, *Prance 20602*, HB! NY! Amazonas San Gabriel [da Cachoeira, ad Río Negro,] VI 1852, *Spruce 2391*, K-L x2! P! **Goiás:** Lago Corumbá, Luziania Margem esquerda do lago, cerca de 1.5 km apos a Barragem (montante), 832 m, 30 III 2005, *Amaral-Santos 2572*, CEN! Lago Corumbá: Luziania Fazenda Suindara do Alagado, 840 m 8 XI 2002, *Pereira-Silva 7053*, CEN! Rodovia Cuiabá-Santarém km 700, 27 II 1980, *Juliani 2*, SP! Serra do Cachimbo, 425 m, 15 XII 1956, *Pires 6277*, NY x2! **Pernambuco:** Camarajibe Clube Campestre Sete Casuarinas (cide de satélite de Recife), *Cervesato s.n.*, AMO x2! **Sao Paulo:** Bertioga bei Santos, *Igot s.n.*, WU! **ECUADOR: Napo:** Cuyabeno, Nature Reserve, Laguna Grande, 240 m, 9 XI 1982, *Asanza 41133*, AAU! QCA x2! Ibid. 240 m, 9 XI 1982, *Asanza 41142*, AAU! Ibid. Collections made from canoe, 240 m, 11 XI 1982, *Asanza 41166*, AAU! QCA! Río Guepi, ca. 200 m, 7 V 1980, *Brandbyge 30581*, AAU! Lagunas de Cuyabeno, second lake, situated some 3 km W of the first lake, 300 m, 23 VIII 1981, *Brandbyge 36020*, AAU! Ibid. *Brandbyge 36021*, AAU! Carretera Coca-Loreto, entre la Comuna 10 de Agosto y el Río Pinguillo, 1000 m, 20 X 1988, *Cerón 5295*, QCNE! Km 5 Tena-Puerto Napo, 550 m, 18 VI 1983, *Dodson 14070*, SEL! Km. 4, Tena to Pto. Napo, 550 m, 23 VI 1987, *Dodson 17225*, MO! QCNE! Km 6, Tena-Río Pano, 550 m, *Gentry 15004*, MO! Cotundo River, Baeza-Tena, 800 m, *Hirtz 1875*, MO! Baeza-Napo, Cosanga River, 850 m, 18 XI 1984, *Hirtz 2125*, MO! Between Puyo and Tena, 600 m, 28 III 1984, *Höijer 686*, SEL! Laguna Cuyabeno, 7 VII 1980, *Jaramillo 2875*, AAU! QCA x2! Laguna de Canangueno, 23 IV 1986, *Jaramillo 8386*, AAU! QCA! Rio Lagarto Cocha, 2 hours upstream from Río Aguarico, 13 VI 1983, *Lawesson 44341*, AAU! QCA! Ibid. 14 VI 1983, *Lawesson 44350*, AAU! QCA! Just north of Archidona, 500 m, 27 VII 1975, *Luer 436*, SEL! Aguarico Yasuni National Park, Laguna Jatun Cocha, near mouth of Río Yasuni, 180 m, 8 XI 1991, *Neill 9938*, QCNE! Road from Archidona to Loreto, km 14, 1000 m, 24 II 1991, *Whitten 91130*, QCNE! **Pastaza:** Between Mera and Moravia, ca. 1000 m, 16 XII 1955, *Asplund 18876*, AMES! G! K-L! NY! km 56 de Tena para Puyo, 950 m, 30 III 1994, *Carnevali 3489*, CICY! Along road between Tena and Puyo, 14 km N of Puyo, 1160 m, *Croat 49675*, MO! Puyo Km 53 on road from Puerto Napo to Puyo, 1000 m, *Dodson 16484*, MO! Mera, ca. 1100 m, 24 II 1972, *Harling 11027*, GB! Between Puyo and Tena, 1200 m, 28 III 1984, *Höijer 681*, SEL!

Veracruz (Indillama), 24 VI 1968, *Lugo 47*, GB! Sector Tarqui, 1100 m, 8 XI 1991, *Tipaz 407*, QCNE! **Morona-Santiago:** Río Upano near Méndez, 700 m, *Hirtz 4030*, MO! Along new road Méndez-Morona, 650 m, 16 VIII 1989, *Werff 11139*, QCNE! **Tungurahua:** Río Negro on road from Baños to Puyo, 1300 m, 12 III 1963, *Dodson 2364*, SEL! Topo, Rd. Baños to Puyo, 1400 m, 20 XI 1981, *Dodson 11089*, SEL! Mera, on the road Baños to Puyo, 1200 m, *Hirtz 2516*, MO! **Sucumbios:** Reserva Faunística Cuyabeno, Laguna Grande, 265 m, 18 III 1989, *Balslev 84457*, AAU! QCA! QCNE! Ibid. 25 III 1989, *Balslev 84584*, AAU! QCA! Ibid. south of Laguna Garzacocha, 265 m, 1 IV 1989, *Balslev 84691*, AAU! Ibid. Río from Pto. Bolivar to above Laguna Canangueno, 265 m, 11 III 1990, *Balslev 97168*, QCA! QCNE! Ibid. *Balslev 97372*, MO x3! QCA! QCNE! Aucacocha, Cuyabeno, orillas del lago, 28 VIII 1993, *Celi 146*, QCA! Imuya Cocha on Río Lagarta Cocha 2 hrs upriver from junction with Río Aguarico, 220 m, *Dodson 18832*, MO! Lago Agrio, Reserva Cuyabeno, área totalmente inundada por Laguna Grande (aguas negras), 230 m, 16 XI 1991, *Palacios 9075*, QCNE! Lago Agrio Reserva Cuyabeno, Laguna Canangueno, 230 m, 18 XI 1991, *Palacios 9115*, QCNE! **Zamora-Chinchipe:** Al norte del centro Shuar-Shaimi, 1000-1100 m, 27 X 1991, *Cerón 17256*, QCNE! Ibid. *Cerón 17276*, QCNE! Nangaritza, Guaysimi, entre Zamora y Zumba, Hort. Ecuagenera, *Hágsater 13859*, AMO! **PERU: Amazonas:** Imaza: Bagua, camino Putuim-Shimutaz, 550 m, 21 VI 1996, *Vásquez 21334*, MO! **Loreto:** Maynas, Río Yavari, around margin of "cocha" across river from Brazilian village of Paumari, 23 XI 1977, *Gentry 20824*, F! MO! NY x2! UC! USM! Iquitos, 100 m, XI 1936, *Klug 10005*, AMES! US! Gamitanacocha, Río Mazán, 100-125 m, 13 II 1935, *Schunke 241*, AMES x3! F x2! NY! UC x2! US! USM! Gamitanacocha, Río Masán, orilla del Río Agnipada, 1 II 1938, *Schunke 14260*, AMES! Maynas carretera Iquitos-Nauta, Zona Reservada Allpahuayo-Mishana, 133 m, 13 X 2001, *Wong 36*, USM! **Puno:** St. Gavan, *Lechler 2391*, K-L! **BOLIVIA: Santa Cruz:** Near Roboré, 400 km east of Santa Cruz, cultivated by L. Moreno, 400 m 5 XII 1978, *Luer 3618*, SEL! Velasco Campamento Las Torres. Margen del Río Iténez (Guaporé); frontera con Mato Grosso, lado NE del Serranía Huanchaca; 24 km S de Flor de Oro, 50 km N del Río Verde, 200-400 m, 26 V 1991, *Peña 331*, F!
OTHER RECORDS: BRAZIL: Amazonas: Humayta Basin of Río Madeira. Between Monte Christo and Santa Victoria on Río Ipixuna, *Krukoff 7251*, flowers in spirit AMO! **ECUADOR: Napo:** Tena-Baeza, km 34, 5000-7000 ft, 7 VI 1983, *Hágsater 7496*, flowers in spirit AMO!, slide AMO! Cotundo River, Baeza-Tena, 800 m, *Hirtz 1875*, slide AMO! Baeza-Napo, Cosanga River, 850 m, 18 XI 1984, *Hirtz 2125*, slide AMO! Río Lagarto Cocha, 2 hours upstream from Río Aguarico. Above Gamitana Cocha, 190 m, *Lawesson, 44341*, illustration AMO! flowers in spirit AMO! **Zamora-Chinchipe:** Nangaritza Guaysimi, entre Zamora y Zumba, Hort. Ecuagenera, *Hágsater 13859*, digital photo AMO! **Sucumbios:** Reserva Faunistica Cuyabeno, Laguna Grande, 265 m, 25 III 1989, *Balslev 84584*, Illustration AMO! flowers in spirit AMO! **PERU:** Cult. Iquitos, *Ricardo Fernández s.n.,* digital image AMO! Tarma-Valle de Chanchamayo, 1900 m, *Gonzalo s.n*., digital image by *Erica Morón,* AMO! **Loreto:** Cerca de Iquitos, afluente del río Amazonas, Isla Petrona, *Fernández s.n.*, digital image AMO!

EPIDENDRUM NITENS **Rchb.f.** **Plate 1361**

OTHER SPECIMENS: MEXICO: without locality, *McDowell s.n.*, AMES! **Veracruz:** Chacamán, 28 XII 1991, *Hernández-Heredia 160*, CORU! Ixhuacán, 8 I 1993, *Hietz 800*, XAL! Cerro Punta Coscomatepec, 10 V 1937, *Matuda 1509*, AMES! MEXU! MICH! MO! Chocaman-Xocotla, 18 XI 1981, *Nee 23256*, XAL! Jalapa, 1894, *Smith 1867*, NY x2! Ibid. 1 I 1894, *Smith 1473*, MO! **Oaxaca:** without locality: *Hágsater 10138*, AMO x2! Cerro Guayabitos, 25 X 1996, *Salazar 5711*, AMO! **Chiapas:** Without locality: *Hágsater 10115*, AMO x2! Aguacatenango-Pinola, Las Rosas, 17 X 1965, *Breedlove 13461*, CAS! Laguna Ocotal Grande, 27 XI 1972, *Breedlove 29917*, DH! Lagos de Montebello, 5 X 1981, *Breedlove 53293* CAS! ! Dos Lagos above Santa Elena, 14 X 1981, *Breedlove 53570* CAS! Dos Lagos above Santa Elena, 15 XII 1981, *Breedlove 56175*, CAS! Tenejapa, Chalam, 23 V 1988, *Breedlove 68602* CAS! La Trinitaria-Montebello, 4 XII 1976, *Breedlove 70830*, DH! Lago Tziscao-Santa Elena, 8 XI 1988, *Breedlove 71304*, CAS! Colonia Esquinca, San Fernando, 1000 m, 1 IX 1994, *Cachón 232,* AMO! Laguna Ocotal Grande, 20 VII 1954, *Dressler 1571*, AMES! MICH! MEXU! NY! UCM! US! Teapixco, 1 I 1953, *Johnson 353-1001*, SEL! Comitán, 25 XII 1948, *Miranda 5067*, MEXU! Ocosingo, 21 IV 1989, *Soto 5505*, AMOx2! (Illustration voucher) Ocosingo-Monte Líbano, 7 VIII 1992, *Soto 6822*, AMO! Montebello-Amparo Agua Tinta, 10 VIII 1992, *Soto 7085*, AMO! Bachajón, 8 VIII 1992, *Soto 7143* AMO! **GUATEMALA: Alta Verapaz**: Cobán, 18 IX 1977, *Rudophe s.n.*, AMES [41983]! Cubilgüitz, 1 III 1943, *Steyermark 44470*, AMES [63517]! **Baja Verapaz**: Santa Rosa, 4 IV 1941, *Standley 91269*, F! AMES! **Chiquimula**: Montaña Nonojá, E of Camotán, 11 XI 1939, *Steyermark 31677*, F! **Izabal**: 26 XII 1941, *Steyermark 41966*, AMES [63518]! F! **BELIZE: Toledo:** Union Camp, 16 V 1979, 750 m, *Whitefoord 1791*, BM! K-L! Little Quartz ridge, 980-1,035 m, *Hawkins 522*, MO!
OTHER RECORDS: GUATEMALA: Quiriguá, 200 m, II 1977, *Hamer A204*, illustration & description, SEL! Xerox AMO! **MEXICO:** Hort. Ames, *McDowell*, floral sketch, AMES! Xerox AMO!

EPIDENDRUM PARANTHICUM **Rchb.f.** **Plate 1367**

OTHER SPECIMENS: MEXICO: Chiapas: Tziscao-Bonampak, 4600 ft, 25 I 1974, *Greenwood s.n.,* AMO! Flor del Río-Nuevo Momón, 1400 m, 11 V 1991, *Martínez 24759*, MEXU! Montebello, 1450 m, 24 X 1988, *Palacios 458*, AMO! MEXU! Lago Tziscao, Lagos de Montebello, 1500 m, 27 V 1975, *Rzedowski 33144*, ENCB! Col. Cuahutemoc, 15 IV 1985, *Shilom 8181*, AMO! (Illustration voucher). MEXU! **GUATEMALA: Alta Verapaz:** Pansamala, 4000 ft, 1 VI 1886, *Tuerckheim 927*, BR! Cobán, 1350 m, 1 VII 1908, *Tuerckheim 1915*, G! NY! W-R x2! Z! **Baja Verapaz:** Purulá, pressed cult. 31 V 1978, *Hágsater 5313*, AMO! **BELIZE: Toledo:** S Maya Mountains, 1140 m, 9 XII 1993, *Allen 15308*, MEXU! MO! Little Quartz Ridge, 980-1035 m, *Hawkins 1527*, MO! Bladen Nature Reserve, 950-1000 m, 11 V 1996, *Holst 5199*, AMO! Ibid. 12 V 1996, *Holst 5246*, AMO! MO! Columbia River Forest Reserve, 900-1050 m, 19 II 1997, *Holst 5848*, MO! Bladen Nature Reserve, 920 m, 22 V 1997, *Davidse 36703*, AMO x2! MO! Ibid. 980-1020 m, 24 V 1997, *Davidse 36785*, AMO x2! MO! **HONDURAS: Comayagua:** Montaña La Choca near Quebrada El Zope, 1500 m, 15 IV 1957, *Molina 8171,* NY! MO! **NICARAGUA: Atlántico Norte:** Cerro La Pimienta, 900-1000 m, 16 IV 1979, *Grijalva 369*, ENCB! U! **Boaco:** San José de los Remates, ca. 1000 m, 11 II 1983, *Moreno 20207*, MO! **Estelí:** Laguna de Miraflores, 7 VI 1975, *Atwood A315*, MO! Laguna Miraflores, 1400 m, 11 VI 1981, *Henrich 375*, MO! **Jinotega:** Aranjuez, 1460-1480 m, 7 V 1980, *Stevens 17019*, MEXU! La Fundadora, 24 V 1981, *Stevens 20463*, MEXU! MO!

Matagalpa-Jinotega, 1200-1400 m, 25 V 1980, *Moreno 584*, MO! Ibid. 1450-1500 m, 16 V 1982, *Moreno 16371*, MO! Weuilí, Reserva Natural Kilambé, 1250-1400 m, 19 III 2001, *Rueda 15884*, MO! **Matagalpa:** Cerro Picacho, 1200-1540 m, 23 V 1985, *Davidse 30434*, MO! Cordillera Cariense, Santa Lastenia-Disparate de Poter, 1300-1500 m, 25 V 1974, *Molina 30487*, ENCB! Aranjuez, 1350-1400 m, 16 V 1982, *Moreno 16358*, AMO! MO! **COSTA RICA:** Santa Rosa, *Endres s.n.,* W-R 14724! Without data, *Endres s.n.*, W-R 5532! Ibid. *Endres s.n*, W-R 5538! Ibid. *Endres 48*, W-R 13646! Ibid. *Endres 48*, W-R 14258! Ibid. *Endres 48*, W-R 31362! Ibid. *Endres 48-48,* W-R 36543! Ibid. *Lucas Rodríguez 11231,* USJ! **Alajuela:** San Pedro de San Ramón, 1100 m, 5 VII 1921, *Brenes 79*, NY! Palmira, 21 XII 1924, *Brenes 1153*, NY! San Pedro de San Ramón, 1050 m, 3 V 1925, *Brenes 1217*, NY! Volio, 1 VII 1998, *Cartín 5*, USJ! Cerros de Santiago, San Ramón, 1100 m, 29 IV 1982, *Carvajal 200*, MO! Reserva de San Ramón, 19 X 1984, *Dressler 105*, USJ! S of San Ramón, ca. 1200 m, 4 XI 1992, *Fosberg 27359*, AMO! Reserva San Ramón, 880 m, 13 X 1992, *Friedberg 65*, USJ! Monteverde, Río Peñas Blancas, 1300-1400 m, 9 VIII 1986, *Haber 5231*, MO! Ibid. 800-900 m, 3 X 1986, *Haber 6084*, MO! Piedades Norte, 14 VII 1978, pressed cult. 10 V 1982, *Hágsater 5671*, AMO x2! (Illustration, AMO!) ENCB! Ibid. pressed cult. 22 III 1984, AMO x4! CR! La Palma de San Ramón, 1240 m, 20 V 1969, *Lent 1684*, NY! Alto Palomo, camino a Bajos del Toro, 2000 m, 10 V 1995, *Morales 5323*, F! La Palma de San Ramón, 1200-1300 m, 27 VI 1972, *Utley 361*, AAU! **Cartago:** Pizirres (?), *Endres* W-R 5535! Ibid. *Endres s.n.*, W-R 5537! SW of Cartago, 5200 ft, *Stork 4537*, MO! Tapantí, above Río Grande de Orosí, 20 I 1968, *Wilbur 9827*, MO! **Guanacaste:** Cordillera de Guanacaste, 1200 m, 10 XI 1986, *Haber 6343*, MO! La Cruz de Abangares, 1400 m, 15 VII 1985, *Haber 2024*, AMO! CR! Monteverde, 1450 m, 22 VI 1986, *Haber 5161*, MO! Monteverde-Las Nubes, 1500 m, 14 VIII 1988, *Haber 8551*, MO! **[Heredia:]** Vara Blanca, 2000 m, 23 XII 1931, *Kupper 242*, M! **Puntarenas:** Monteverde, 1450-1500 m, 3 VI 1989, *Atwood 89-110,* MO! Monteverde, 30 XI 1984, *Dressler 215*, USJ! Monteverde, 1100 m, 24 V 1993, *Fuentes 330*, AMO! INB! Monteverde, 1420 m, 10 VI 1985, *Grayum 5403*, AMO! CAS! MO! SEL! Monteverde, 1400 m, 15 V 1986, *Haber 4924,* MO! Cabeceras del Río Aranjuez, 1200 m, 27 V 1997, *Herrera 9019*, MO! Monteverde, 1500-1550 m, 4 XI 1992, *Ingram 1652*, AMO! MO! Monteverde, 1550 m, 16 VII 1998, *Pupulin 885*, USJ! San Vito de Java, 5000 ft, 22 III 1967, *Raven 20870*, NY! San Vito-Cerro Paraguas, 1200-1300 m, 2 X 1996, *Sánchez 458*, AMO! **San José:** San Cristobal Norte, ca. 1000 m, 28 I 1988, *Hágsater 9498*, AMO! Mountains East of San José, 28 XI 1960, *Palmer s.n.*, NY! **PANAMÁ: Chiriquí:** La Fortuna, Chiriquí river, ca. 1025 m, 24 III 1978, *Hammel 2298*, MO! Cerro Punta, 2200 m, 27 II 1973, *Liesner 296*, MO!

OTHER RECORDS: MEXICO: Chiapas: Las Margaritas, Tziscao, 1300 m, *Dressler sub Hágsater 3128*, slide color, AMO! Km 17.8 Tziscao-Bonampak, 4600 ft, 25 I 1974, *Greenwood s.n.* cult. Oaxaca, 22 V 1974, slide color, AMO! **COSTA RICA:** Without data, *Horich s.n.*, illustration, xerox, AMO! **Alajuela:** San Ramón, ca. 1100 m, photographed 27 V 1998, *Pupulin 735*, published as *Epidendrum sancti-ramoni Kraenzl.*, Vanishing Beauty: Native Costa Rican Orchids Vol. 1: 304. 2005. Piedades Norte de San Ramón, 1978, *Manuel Rodríguez s.n.*, illustration, xerox, AMO!

EPIDENDRUM PARKINSONIANUM Hook. Plate 1368

OTHER SPECIMENS: MÉXICO: Without locality, I 1848, *Ghiesbreght 99*, G! Ibid. I 1900, *Purpus 243*, US! **Jalisco:** Manantlán, 21 III 1983, *González 1319*, AMO! IBUG! Manantlán, 1800 m, 1 V 1985, *Pérez de la Rosa s.n.*, IBUG! Las Joyas, Sierra de Manantlán, 1800 m, 2 V 1985, *Sainz s.n.*, IBUG! Ibid. 6 VI 1984, *Saínz 135*, IBUG! **Veracruz:** Orizaba, 1 IV 1855, *Botteri s.n.*, G! Orizaba, IV 1855, *Botteri 1251*, P x3! Xalapa, 1 I 1988, *Cházaro s.n.*, IBUG! Parque Ecológico Francisco Javier Clavijero, 1350 m, *Espejo 1951*, AMO! Xalapa, 1200 m, 1 I 1843, *Leibold 44 / 714*, W-R! Huastepec et Tlacolula, V 1838, *Linden 16*, K-L! P! Maltrata, 1 V 1937, *Matuda 1339*, MEXU! MICH! MO x2! NY! Orizaba, I 1853, *Müller 826*, K-L! [Orizaba], I 1855, [*Müller*] *830*, NY x2! Parque Ecológico Fco. Javier Clavijero, 1350 m, 19 V 1994, *Sánchez 316*, AMO! Orizaba, *Schlumberger 886*, W-R! Ibid. *Schlumberger 8263*, BR! Cascadas de Naolinco, 1450 m, 28 X 1970, *Ventura 2723*, DH! ENCB! Jilotepec, El Esquilón, 1450 m, 15 III 1971, *Ventura 3282*, ENCB! Jilotepec, Rincón del Muerto, 1350 m, 26 IV 1971, *Ventura 3500*, ENCB! Naolinco, 1450 m, 7 IX 1973, *Ventura 8920*, ENCB! Ibid. 9 IX 1976, *Ventura 13211*, AMO! ENCB! MEXU x2! Jalapa, 4500 ft, 6 VIII 1942, *Weaver 926*, US! **México:** Ocuilan-Cuernavaca, 1850 m, 23 IV 1988, *Aguirre-Olavarrieta 1519*, AMO! Ibid. *Aguirre-Olavarrieta 1520*, AMO! Ibid. *Aguirre-Olavarrieta 1534*, AMO! Ocuilan-Cuernavaca, ca. 2500 m, 1 XI 1983, *Salazar 4391*, AMO! ENCB! MEXU! **Morelos:** Cuernavaca, 2500 m, 1 V 1904, *Diguet s.n.*, P x2! Mts. Zempoala, ca. 2000 m, 5 V 1932, *Oestlund 2752*, MEXU! S! Mt. Zempoala, Tepeyte, 2300 m, 20 V 1937, *Oestlund 2876*, AMO! CAS! F! SEL! US! Cuernavaca, 6500 ft, 29 V 1898, *Pringle 6867*, BR! CM! CR! E! ENCB! F! G x2! K-L! M! MEXU! MINN MO! NY! P! PR UC! US! W-R! Z! Sta. María Ahuacatitlán, 1 V 1941, *Sawyer 498*, F! Sta. María Ahuacatitlán, 2000 m, 1 V 1948, *Sawyer 7564*, F! Mexicapa, ca. 2000 m, 1 IV 1998, *Soto 8903*, AMO! Volcano Popocatepetl, 2200-2600 m, 21 V 1938, *Williams 3857*, US! **Michoacán:** Pueblo Nuevo, Volcan Tancítaro, 2540 m, 20 III 1977, *Puga 10321*, IBUG! MEXU! **Guerrero:** Acapulco-Mexico, I 1842, *Ghiesbreght 265*, P! Omiltemi, 2300 m, 21 VI 1985, *Salazar 691*, AMO x2! Omiltemi, ca. 2300 m, 25 VI 1985, *Salazar 764*, AMO! Ibid. *Salazar 765*, AMO! Ibid. *Salazar 767*, AMO! Ibid. *Salazar 768*, AMO! Ibid. *Salazar 769*, AMO! Ibid. *Salazar 770*, AMO! Ibid. *Salazar 771*, AMO! La Escalerilla-La Yerbabuena, ca. 2400 m, 2 II 1983, *Salazar 4392*, AMO x2! Cruz de Ocote, 1900 m, 22 V 1983, *Soto 1021*, AMO x2! **Oaxaca:** Without locality, 2103 m, III 1975, *Bashor 1464*, AMO! Oaxaca-Pto. Escondido, 1920 m, *Jiménez 1593*, AMO x2! Juquila Mixes, 5500 ft, 2 I 1973, *Pollard 2H-190-93*, AMO! Cerro El Baúl, 1400 m, 21 III 1997, press. 4 VII 2001, *Soto 8218*, AMO! Ibid. press. 15 VI 2002, AMO! **Chiapas:** Without locality, press. 3 VI 1988, *Hágsater 8109*, AMO x4! Ibid. press. 29 V 1989, AMO x2! CR! Chanal, 15 VI 1962, *Alava s.n.*, UC x2! Ibid. 24 II 1962, *Alava 57690-1*, K-L! US! Nabenchauk, 6000 ft, 1 IV 1965, *Breedlove 9500*, CAS! F! MEXU! WIS! Cerro El Baúl, 1600 m, 21 IV 1972, *Breedlove 24721*, CAS! Las Margaritas-Campo Alegre, 1600 m, 5 V 1973, *Breedlove 34773*, CAS! Cerro El Baúl, 1850 m, 3 V 1988, *Breedlove 67087*, CAS! Col. Rodolfo Figueroa, 1000 m, 16 VIII 1993, *Cabrera 201*, CORU! Comitán, IV 1949, *Carlson 2146*, F! San Cristóbal-Amatenango, 1 VIII 1967, *Hágsater s.n.*, AMO! CHIP! IBUG! K-L! San Cristobal-Amatenango, 2100 m, 24 IV 1982, *Hágsater 5307*, AMO! Zinacantán, 6700 ft, 27 V 1966, *Laughlin 980*, CAS! MEXU! US! La Grandeza, 2016 m, 19 V 1945, *Matuda 5584*, MEXU! UC! US! Ojo Río Yashanal, 1700 m, 10 VII 1982, *Méndez 4414*, MEXU x2! Mts. near Fenix, *Purpus 10243*, UC! Tuxtla Gutiérrez-Pichucalco, 1600 m, 1 IV 1985, *Soltero 152*, IBUG! Huixtla-Motozintla, 1500-1900 m, 16 IX 1985, *Soto 1749*, AMO x8! Pueblo Nuevo Solistahuacán-Rayón, 1450-1700 m, *Soto 5084*, AMO! Las Margaritas-Cruz de Rosario, 1550 m, 29 III 1997, *Soto 8148*, AMO! **GUATEMALA:** Without locality, V 1886, *Bernoulli 356*, K-L! NY! W-R! Ibid. *Klaboch 7*, W-R! Ibid. I 1846 *Savage*

s.n., P! Hort. Guatemala, 1 V 1957, *Pacheco 5*, F! **Huehuetenango:** Huehuetenango-Aguacatlán, ca. 1900 m, 2 I 1941, *Standley 82162*, F! **Quiché:** Tocopilar, 1500-2300 m, 6 VII 1882, *Lehmann 1570*, AMES! G x2! US! W-R! Nebaj-Sacapulas and Cunen, 6700-7300 ft, 18 VII 1964, *Proctor 25135*, LL! MO! Río de las Violetas, 5800-6000 ft, 22 VII 1964, *Proctor 25223*, LL! MO! **San Marcos:** Volcán Tajomulco, 2300-2800 m, 28 II 1940, *Steyermark 36926*, F! **Quetzaltenango:** Volcán Sta. María, 1500-3000 m, 12 I 1940, *Steyermark 33923*, F! **Guatemala:** Zona 15, 1500 m, 8 IV 1970, *Harmon 2249*, ENCB! MO! NY! Arrazola, 6000 ft, IV 1893, *Heyde 4604*, AMES! Garden of Don Mariano Pacheco H., 1650 m, 14 V 1942, *Steyermark 46393*, F! **Zacapa:** Loma El Picacho-Cerro de Monos, 2000-2600 m, 16 I 1942, *Steyermark 42762*, F! **EL SALVADOR:** Cerro Verde, 1850 m, 10 IV 1970, *Hamer 45*, MO! **Santa Ana:** Cerro el Aguila, 1600-1700 m, 23 V 1993, *Linares 393*, MEXU! Volcán de Santa Ana, 1640 m, 18 IV 1941, *Tucker 1266*, F! G! LL! MICH! NY! UC! US! **HONDURAS: Francisco Morazán:** La Montañita, 1730 m, 10 III 1956, *Allen 6774*, US! Cerro Uyuca, P. N. La Tigra, 1500 m, 24 III 1946, *Allen 11178*, F! Río Yeguare, El Zamorano, 780-900 m, 26 XI 1946, *Standley 781*, F! Cerro Uyuca, P. N. La Tigra, 1238 m, 1 I 1944, *Valerio 2013*, F! **Intibucá:** Barranco Yamaranguila, Yashse, 1500 m, 12 IV 1956, *Molina 6540*, F! SEL! US! **NICARAGUA: Jinotega:** Jinotega, 1030-1300 m, 19 VI 1947, *Standley 9556*, F! [**Nueva Segovia**]: Segovia, I 1898, *Oersted s.n.*, W-R x2! Segovia, I 1845, *Oersted 6844*, US! **Madriz:** Volcán de Somoto (Tepesomoto), 1500-1600 m, 16 IV 1980, *Moreno 2153*, ENCB! MO! Volcán Somoto, 1300-1500 m, 22 IV 1981, *Stevens 20116*, MO! **Estelí:** Cerro Quiabú, 1300-1400 m, 14 IV 1981, *Moreno 8214*, MEXU! La Laguna de Miraflores, por El Paso de León, 1200-1300 m, 17 IX 1982, *Moreno 17455*, MO! El Tisey-La Estanzuela, 1200-1400 m, 22 V 1983, *Moreno 21334*, MO! Cerro Quiabú (= Cerro Las Brisas), 1325 m, 27 IV 1980, *Stevens 16932*, MO! **COSTA RICA:** Without locality and collector, W-R 52103! 27 II 1963, *Lucas 82*, AMO! Cedral de Dota, 1 III 1990, *Mora de Retana s.n.*, USJ! **Alajuela:** Cartago, 1450 m, IX 1922, *Brenes 16*, CR! NY! Alfaro Ruiz Palmira, 5800 ft, 24 I 1938, *Smith 231*, F! MO! Alfaro Ruiz Zapote de S. Carlos, 2000 m, 16 III 1938, *Smith 334*, F! Alfaro Ruiz Zapote de S. Carlos 2000 m, 13 III 1937, *Smith 458*, F! K-L! **Puntarenas:** Cedral de Montes de Oro, Altos de Lagunilla, 1600 m, 23 IV 1987, *Haber 7017*, AMO x2! F! **San José:** Without locality, I 1941, *Leon 566*, CR! F! Claussen's garden, 15 VI 1924, *Alfaro s.n.*, US! Santa María de Dota, 2000 m, 9 IV 1999, *Morales 6513*, INB! **Cartago:** Tobosí, 1900 m, 11 II 1973, *Lent 3156*, CR! F! MO! NY! Cerro de La Carpintera, 1500-1850 m, 1 II 1924, *Standley 35738*, US! Navarro valley, 6000 ft, 1 V 1928, *Stork 1724*, MO! **PANAMÁ: Chiriquí:** Boquete Llano del Volcán, 1500 m, 27 V 1946, *Allen 3515*, BR! F! FI G! K-L! MICH! NY! P x2! S! U! UC! US! Cerro Punta, 1400-1800 m, 12 VII 1983, *Hamilton 3829*, F! MEXU! Río Chiriquí Viejo, Monte Lirio, 1300-1900 m, 27 VI 1933, *Seibert 217*, MO! NY! WIS!
OTHER RECORDS: Without locality, *Galeotti 5090*, AMES! Ibid. *Hágsater s.n.*, Illustration, AMO! Ibid. *Lamas s.n.*, Illustration, AMO! Ibid. 1 IV 1973, *Pesqueira s.n.*, flowers in spirit AMO! **Morelos:** Without locality, *Castorena s.n.*, Illustration AMO! **Chiapas:** Without locality, *Hágsater 8109*, (Illustration voucher) AMO! flowers in spirit AMO!

EPIDENDRUM PERALTUM Schltr. — Plate 1369

OTHER SPECIMENS: COLOMBIA: St. Albans, Sander & Co., K-L! Arcos, *Lehmann 273*, K-L! L! NY! **Cauca:** El Tambo, Munchique, 1900 m, 27 VIII 1938, *Sneidern 378*, S! **Valle del Cauca:** Cali-Buenaventura, 2000-2050 m, col. 24 IV 1983, pressed cult. 28 VI 1992, *Hágsater 7306*, AMO! (Illustration, AMO!) La Cumbre, 1700-2200 m, 11 IX 1922, *Killip 11420*, AMES! Tacotá, 1800-2300 m, VII 1890, *Lehmann 8176*, K-L! Farallones de Cali, 2000 m, 30 XII 1883, *Lehmann 2013*, G! Tocotá, 1800 m, 30 XII 1883, *Lehmann 4154*, G x2! **ECUADOR:** Without locality, Hort. Alfonzo Pozo, *Hágsater 9600*, AMO! (illustration, AMO!) **Carchí:** Maldonado, 2500 m, 28 XI 1984, *Dodson 15466*, MO! Paramo El Angel, 2600 m, 1 VIII 1985, *Dodson 16148*, GH! MO! QCNE! Tulcán-Maldonado, 2855 m, col. 29 IV 1993, pressed cult. 10 XI 1993, *Hágsater 11264*, AMO! Machines, 2200-2400 m, *Harling 12311*, AMES! GB! Maldonado-Tulcán, 2525 m, 1 V 1993, *Hágsater 11341*, AMO! (Illustration voucher). QCA! W-R! Ibid. *Hágsater 11346*, AMO! Tulcán-Maldonado, ca. 2600 m, 1 III 1974, *Harling 12367*, GB! Tufiño, 3000-4000 m, 28 VII 1989, *van der Werff 10664*, MO! QCNE! Maldonado-Tulcán, ca. 1700-2000 m 21 II 1978, *Luer 2676*, SEL! Maldonado, Río Chilma Valley, 2350-2450 m, 30 V 1985, *Stein 2908*, MO! Cerro Golondrinas, 2000-2400 m, 18 VIII 1994, *Tirado 1299*, QCNE! **Loja:** Río Yambala, 2400 m, 13 II 1982, *Dalessadro 151*, SEL! Vilcabamba, 2100 m, IV 1985, *Dalessandro 385*, MO! **Zamora-Chinchipe:** Zumba, 1800 m, 25 I 1989, *Höijer 1192*, SEL!

EPIDENDRUM POEPIGGII Hágsater — Plate 1373

OTHER SPECIMENS: ECUADOR: Azuay: Valle del Paute, 2000 m, 24 XI 1988, pressed cult. 19 VI 1992, *Hágsater 9745*, AMO x4! (spirit and illustration) **Morona-Santiago:** Yangana-Valladolid, 2800 m, pressed cult. 19 VI 1992, *Hágsater 10684* (Illustration voucher), AMO! AMES! QCA! Limón, 1100-1200 m, 23 IV 1985, *Harling 24501*, AMES! GB! QCA! Limón-Cuenca, 2000 m, 28 III 1985, *Hirtz 2408*, AMES! AMO! MO! Cuenca-Limón-Méndez, 900 m, I 1989, *Hirtz 4020*, MO! East Andes of Cuenca, 800-1000 m, V 1887, *Lehmann 6509*, K-L! Guarumales, 1650 m, 24 III 1991, *Luer 15233*, AMO! MO! Cordillera de Cutucú, Logroño-Yaupi, 1600 m, XI 1976, *Madison 3499*, SEL! **Zamora-Chinchipe:** Valladolid-Tapala, 2100 m, 19 I 1982, *D'Alessandro 127*, SEL! Río Jambos, 1000 m, 23 XI 1989, *Dodson 17843*, MO! QCNE! Yangana-Valladolid, 2000 m, 18 III 1984, *Luer 9592*, SEL! Sumbi-Paquisha-Cordillera del Condor, 1200 m, 19 II 1986, *Hirtz 2828*, MO! **PERU:** Andes peruanos, [*Poeppig*] *829*, P! **Cajamarca:** San Ignacio, La Palma, NW de Chirinos, 1780 m, 4 II 1988, *Gentry 61142*, MO! USM! Santa Rosa, Cerro San Cristóbal, 1625-1745 m, 26 III 2006, *Ortíz 1320*, USM! **Puno:** Valle de San Gabán, Carabaya, 950-1000 m, 8 II 1967, *Vargas 18912*, AMES! CUZ!
OTHER RECORDS: ECUADOR: Morona-Santiago: Limón-Cuenca, 2000 m, 28 III 1985, *Hirtz 2408*, slide, AMO! Cuenca-Limón-Méndez, 900 m, I 1989, *Hirtz 4020*, slide, AMO!

EPIDENDRUM PORPAX Rchb.f. — Plate 1375

OTHER SPECIMENS: MÉXICO: Chiapas: Las Margaritas, 1700 m, 15 IX 1974, *Breedlove 37950*, CAS! La Soledad, 1525 m, 29 IX 1981, *Breedlove 53110*, CAS! Campo Alegre, 1525 m, 7 XII 1986, *Breedlove 66215*, CAS! Ocosingo-Bachajón, col. XII 1970, pressed cult. 2 X

1982, *Hágsater 1427*, AMO! Monte Bello, col. XII 1972, pressed cult. 18 VIII 1977, *Hágsater 3108*, AMO! (Illustration voucher, xerox copy ENCB! MEXU!) Ibid. 23 VIII 1982, *Hágsater 3108*, AMO! Lagos Monte Bello, 1400 m, 22 V 1972, *Lange sub Pollard 1A-190-98*, MEXU! Laguna Ocotalito, 980 m, 2 II 1986, *Martínez 17281*, MEXU! Cascada de Mesbiljaz, 15 X 1985, *Méndez 8486*, MEXU! Santa María de Los Arcos, 1500 m, 12-13 II 1935, *Nagel 4464*, F! MO! S! SEL! Ibid. 27 VIII 1936, *Nagel 4464*, US! Lake Montebello, 1350 m, 6 IX 1938, *Nagel 4504*, MO! US! Santa María de Los Arcos, ca. 1600 m, 13 II 1935, *Nagel 4553*, BM! Finca San Pedro, ca. 1500 m, 31 VIII 1936, *Nagel 5904*, US! Ibid. 4 IX 1936, *Nagel 5904*, S! Ibid. 20 IX 1936, *Nagel 5904*, SEL! Ibid. 3 IX 1938, *Nagel 5904*, MO! Las Margaritas, 1500 m, col. 14 VII 1991, pressed cult. 25 IX 1991, *Pérez 227*, AMO! (illustration, AMO!) San Cristóbal de las Casas, 1600-2200 m, pressed cult. 24 I 1983, *Rauh 52669*, AMO! Metzabok-Monte Líbano, 950 m, col. 14 VI 1986, pressed cult. 16 I 1991, *Soto 2855*, AMO! Ibid. pressed cult. 12 III 1987, *Soto 2857*, AMO! Ibid. 18 I 1991, *Soto 2857*, AMO x2! Ibid. *Soto 2859*, AMO! Ibid. 12 I 1988, *Soto 2859*, AMO x2! Las Margaritas-Cruz de Rosario, 1550 m, 29 III 1997, *Soto 8165*, AMO! **GUATEMALA: Baja Verapaz:** Sierra de Las Minas, El Rancho, 3300 ft, 3 I 1908, *Kellerman 7033*, F x2! MEXU! NY! US! **HONDURAS: Olancho:** Paraíso, según notas HEID "Guatemala" 11/78, 1200 m, 29 XII 1982, *Hágsater 6865*, AMO! Ibid. pressed cult. 1 IX 1989, HEID 0-10708, *Hess sub Hágsater 6865*, AMO x4! Dulce Nombre de Culmí, Río Wampusito, 500-700 m, 12 III 1972, *Nelson 427*, F! **NICARAGUA:** Without locality, VI 1868, *Tate 495*, K-L! **Boaco:** Cerro Mombachito, 1059 m, 24 I 1980, *Araquistain 960,* MO! **Chontales:** VI 1868, *Tate 493 (229),* K-L! San Pablo de Oluma, 600 m, 30 XII 1983, *Stevens 22721*, MO! **Estelí:** Laguna de Miraflores, 1240-1300 m,13 IX 1981, *Moreno 10972A*, MO! **Jinotega:** La Fundadora, 1100-1150 m, 31 X 1970, *Stevens 15351*, MO! **Madriz:** Somoto "El Silencio", 1200-1300 m, 18 IX 1982, *Moreno 17630*, MO! Cerro Quisuca, 1100-1250 m, 22 IX 1979, *Stevens 16101*, MO! Cerro Quisuca, 1100-1250 m, 24 IX 1980, *Stevens 18009*, MO! **Matagalpa:** Aranjuez, 1400 m, 5 XII 1973, *Williams 42783*, MICH! **COSTA RICA:** Volcán Chiriquí, 15 IX 1965, *Wilson s.n*, HB! **Alajuela:** San Ramón, *Endres 297*, W-R x6! San Pedro de San Ramón, 1025 m, 17 I 1922, *Brenes 162*, NY! Cerro de San Pedro de San Ramón, 1175 m, 12 XI 1923, *Brenes 205(93)*, CR! San Pedro de San Ramón, 1850 m, 10 X 1923, *Brenes 666 (54)*, CR! San Pedro de San Ramón, 1025-1050 m, 18 I 1925, *Brenes 2430*, CR! San Pedro de San Ramón, 950 m, 10 XI 1923, *Brenes 2990*, NY! San Pedro de San Ramón, 1025-1050 m, 18 I 1925, *Brenes 3253*, NY! San Pedro de San Ramón, 19 XI 1927, *Brenes 3419*, NY! **Cartago:** Muñeco, Tucurrique, 2 IX 184, *Dressler 18*, USJ! **Guanacaste:** El Silencio, 750 m, 13 I 1926, *Standley 44721*, US! El Arenal, 485-600 m, 18 I 1926, *Standley 45102*, US! **Puntarenas:** Monteverde, 20 XI 2000, *Bello sub Hágsater 12428*, AMO! Monteverde, 1450 m, 18 XII 1988, *Haber 8909*, CR! Arancibia de Miramar, 1100 m, 12 XII 1992, *Mora s.n.*, USJ! **San José:** Cerros de Turrubares, Faldas del Cerro Pelón, sea level?, 7 XI 1990, *Jiménez 943*, AMO! **PANAMA: Chiriquí:** 4000 ft, *Powell 244*, MO! **COLOMBIA:** Without locality, *Lehmann sub B.T. 266*, NY! **Cundinamarca:** "San Claver", Santandercito, 1550 m, 20 XI 1967, *Ortíz Valdivieso 14*, HPUJ! Bogotá, VII 1931, *Pérez 1067*, COL x3! US! Santandercito, 1600 m, VI 1946, *Uribe 1251*, COL! US x2! Cumaca, Calandaima, 1700 m, I XI 1964, *Uribe 5021*, COL! **VENEZUELA: Distrito Federal:** Colonia Tovar, W-R! Coloniam Tovar, *Fendler 1435,* BR! F! G x3! P! MO! W-R! Caracas, *Lansberg s.n.*, W-R 4174!

OTHER RECORDS: MEXICO: Chiapas: Monte Bello, XII 1972, *Hágsater 3108*, color photo by E. Hágsater, in M. Soto *et al*., 2007, Orchids of Mexico, Digital Catalogue: fig. 0392, México, Instituto Chinoín, AMO! Ibid. 1400 m, 4 IX 1973, *Lange sub Pollard 1A-190-98*, note, flower card and b/w photographs, AMO! MEXU! **GUATEMALA:** Without locality, only indicated as Region 1 (Pacific Littoral), *Behar s.n.*, color photo published in Guatemala and its Orchids, p. 44. **NICARAGUA: Jinotega:** Santa María Ostumas, 4100 ft, *Heller 1003*, xerox of illustration, AMO! **COSTA RICA: San José:** Alto de San Juan road to Dominical, 890 m, 28 VIII 1991, photographed 21 I 1996, *Pupulin s.n.*, color photo, in F. Pupulin, 2005, Vanishing Beauty: Native Costa Rican Orchids 1: 271, San José, C.R., Editorial de la Universidad de Costa Rica; **[Alajuela:]** San Ramón, *Endres 297*, notes and illustration, W-R x2! **Cartago:** Turrialba, Moravia de Chirripó, ca. 1150 m 12 VI 2002, photographed 9 II 2004, *Pupulin 3939*, color photo, in F. Pupulin, 2005, Vanishing Beauty: Native Costa Rican Orchids 1: 273, San José, C.R., Editorial de la Universidad de Costa Rica. **COLOMBIA: Cundinamarca:** "San Claver", Santandercito, 1550 m, 20 XI 1967, *Ortiz Valdivieso 14*, xerox of illustration, AMO!

EPIDENDRUM PORPHYREUM Lindl. Plate 1377

OTHER SPECIMENS: COLOMBIA: Nariño: road to Buesaco, NE of Pasto, 2600-2800 m, 11 I 1981, *Gentry 30448*, JAUM! Azufral, bei Túquerres, 2500-3000 m, 13 VII 1880, *Lehmann 28*, W-R 59074! Túquerres, V 1833, *Triana 1371*-6, COL! **ECUADOR:** Without locality, *Hágsater 5918*, AMO! Ibid. *Hágsater 10921*, AMO! Ibid. Sodiro *s.n.*, QPLS x8! In sylv. subandinis, *Mille s.n.*, QPLS! **Carchi**: Tulcán-Tufiño-Maldonado, 3100-3200 m, 12 XII 1986, *Jaramillo 9145*, COL! F! MO! NY! Tulcan-Maldonado, 3100-3200 m, 12 X 1986, *Jaramillo 9148*, QCA! W of Tulcán, ca. 2000-2500 m, 25 VIII 1978, *Luer 3357*, SEL! **Chimborazo:** Paragora-Chimborazo, *Sodiro s.n.*, QPLS! Río bamba-Pangor, *Sodiro 169/62*, QPLS! (illustration, AMO!) **Imbabura**: Azabí, 2800 m, 29 XI 1949, *Acosta 14719*, F! Hda. La Florida, 1900-2500 m, 28 VIII 1992, *Álvarez 635*, QCNE! Sigsipamba, 9300 ft, 6 X 1944, *Drew E-264*, AMES! Intac, 9000 ft, 9 VI 1944, *Drew E-517*, AMES x4! Otavalo, col. VIII 1979, pressed cult. 26 I 1980, *Hágsater 5405*, AMO! Ibid. pressed cult. 16 IV 1982, *Hágsater 5905*, AMO! (Illustration voucher). Ibid. pressed cult. 22 VI 1984, *Hágsater 5905*, AMO x4! Ibid. pressed cult. 2 I 1985, *Hágsater 5905*, AMO! Ibid. pressed cult. 18 II 1985, *Hágsater 5905*, AMO! Otovalo to Selva Alegre, 2100-3000 m, col. 13 IV 1984, pressed cult. 21 VI 1992, *Hágsater 7751*, AMO! Otavalo, hort. G.C.Kennedy, 2500 m, pressed cult. 2 I 1985, *Hágsater 5909A*, QCNE! Cuicocha to Selva Alegre, 6 XII 1986, *Hágsater 8951*, AMO! Ibid. pressed cult. 10 XII 1990, *Hágsater 8951*, AMO! Ibid. pressed cult. 24 XI 1991, *Hágsater 8951*, AMO! Tablachupa, 2500-3000 m, 26 XI 1992, *Gudiño 1979*, QCNE! Selva Alegre-Otavalo, 2800-3000 m, 4 XII 1988, *Jorgensen 65612*, QCA! QCNE! Apuela, 2550 m, 3 XII 1975, *Madison 2304*, SEL! Cuellaje, 2200 m, 14 I 1991, *Palacios 6800*, QCNE! Plaza Gutiérrez, Cotacachi, 3000 m, 18 VI 1992, *Tipaz 1183*, QCNE! **Pichincha:** Los Alpes, 2800-3000 m, 19 I 1944, *Acosta 7047*, F! Reserva Pululahua, 2500-3000 m, 11 I 2000, *Álvarez 2590*, NY! Valley of Río Pilaton, Garretas, 2500 m, 4 XI 1939, *Asplund 9673,* BR! S! Guarumal, ca. 2000 m, 11 XII 1939, *Asplund 10095*, CAS! K-L! NY! S! San Juan-Chiriboga, ca. 3100 m, 29 IV 1955, *Asplund 16118*, AMES! NY! Ibid. ca. 2300 m, 31 XII 1955, *Asplund 18962*, AMES! K-L! NY! Chillogallo, 2800-3100 m, 22 I 1981, *Balslev 1662*, AMES! Chillogallo-Chiriboga, 2400 m, 18 X 1981, *Balslev 2106*, QCA! Santo Domingo de los Colorados-Quito, 2280 m, 8 II 1978, *Bamps 6205*, AMES! Tandapi, 1500-2000 m, I 1979, *Besse 183,* QCA! SEL! Quito-Santo Domingo, 2100 m, 25 IX 1980, *Besse 716*, SEL! Aloag-Santo Domingo, 2600 m, 16 X 1981, *Bockemhl 9326*, AMO! Quito-Santo

Domingo, 2000 m, 12 XII 1987, *Bliemsrieder 70*, QCA! Quito-Santo Domingo (vía Chiriboga), 2300 m, 15 XII 1976, *Boeke 498*, SEL! Reventazón-Chaupisacha, 2070-2300 m, 9 XII 1988, *Cerón 5681*, MO! QCNE! Cerro Corazón, 8000-9300 ft, 5 I 1945, *Camp E-1662*, NY! Reserva Pululahua, 1800-3356 m, 30 VIII 1987, *Cerón 1965*, QCNE! Nono-Nanegal, 2000 m, 20 VI 1967, *Dodson 3731*, SEL! Tandapi, ca. 1800 m, 16 IX 1972, *Dodson 5153*, QCA x2! SEL! Quito-Santo Domingo vía Tandapi, 2600 m, 10 XI 1984, *Dodson 15443*, AMES! MO! QCA! QCNE! Pasochoa, 2850-3900 m, 29 X 1988, *Gavilanes 93*, QCA! E of Santo Domingo, ca. 2800 m, 1 II 1974, *Gentry 9496*, MO x2! (mounted with *E. spathatum*). Tandapi, col. 1 I 1979, pressed cult. 21 VI 1992, *Hágsater 6063*, AMO x2! Quito-Bancos, 7000-10000 ft, pressed cult. 7 XI 1984, *Hágsater 7507*, AMO! Aloag-Santo Domingo, 9550 ft, 8 VI 1983, *Hágsater 7543*, AMO! Nono-Tandayapa, 2300 m, 5 XI 1986, *Hágsater 8866*, AMO! Río Alambi, 2200 m, 5 XII 1986, *Hágsater 8870*, AMO! Mina Selva Alegre, 2740 m, *Hágsater 8991*, AMO! Ibid. 2740 m, col. 6 XII 1986, pressed cult. 17 VI 1990, *Hágsater 8993*, AMO! Ibid. pressed cult. 3 IX 1990, *Hágsater 8993*, AMO! Ibid. pressed cult. 23 VIII 1990, *Hágsater 8993*, AMO x4! flowers in spirit, AMO! (illustration, AMO!). Ibid. pressed cult. 14 VI 1991, *Hágsater 8993*, AMO x3! Ibid. pressed cult. 21 VI 1992, *Hágsater 8993*, AMO! Paso San Juan, 2900 m, col. 8 XII 1986, pressed cult. 1 XII 1988, *Hágsater 9004*, AMO x2! Ibid. 8 XII 1986, *Hágsater 9007*, AMO! Nono, ca. 2200 m, 26 I 1974, *Harling 11629*, AMES! GB! Quito cult. *Holmgren 265*, S! Quito, *Jameson s.n.*, K-L! Ibid. 1848, *Jameson s.n.*, L! Ibid. *Jameson 177*, W-R 50180! (mounted with *Jameson 736, E. spathatum*). Ibid. *Jameson s.n.*, L 902322-1817! Montaña Mojanda, 2400 m, 4 I 1880, *Lehmann 430*, G! San Juan-Chiriboga, 2800-2950 m, 20 III 1979, *Løjtnant 11245*, GB! Nono-Tandayapa, 2400 m, 24 III 1979, *Løjtnant 11299*, AAU! GB! Quito-Chiriboga, ca. 3000 m, 18 II 1978, *Luer 2627*, SEL! Ibid. 2700 m, 6 II 1979, *Luer 3849*, SEL! between Moran and Olivos, 3200-3500 m, 10 VII 1935, *Mexia 7486*, F! UC! US! Nono, 2700 m, 7 IX 2001, *Mites 423*, MO! Ibid. 2600-2700 m, 3 X 2001, *Mites 454*, MO! San Juan, 2500-2750 m, 12 I 1988, *Molau 2439*, AAU! GB! QCA! QCNE! Quito-Chiriboga-Santo Domingo, 1900-2100 m, 16 II 1989, *Palacios 3882*, QCNE! Chiriboga-Dos Ríos, 1863 m, 4 II 1949, *Scolnik 1621*, AMES! Aloag, 2600 m, 21 III 1967, *Sparre 14909*, S! Río Alambí, 2200-2500 m, 31 V 1967, *Sparre 16784*, S! Chillogallo-Chiriboga, 2900 m, 7 VI 1967, *Sparre 16925*, S! Ibid. *Sparre 16926*, S! Río Alambí, 2200-2500 m, 23 X 1967, *Sparre 19324*, S! Saloya-Santo Domingo, 1800 m, 4 II 1949, *Solís 12055*, F! Quito, *Sodiro s.n.*, QPLS! Pasochoa, *Sodiro s.n.*, QPLS! El Pahuma, 2400 m, 7 XI 1999, *Suin 429*, MO! Ibid. 2500 m, 15 I 2000, *Suin 489*, AMO! Quito-Sto. Domingo, 7000 ft, 11 VIII 1975, *Synge 45*, K-L! Santo Domingo-Quito, 1500-2100 m, 12 IV 1984, *Thurston T-4113*, AMO! Ibid. pressed cult. 28 XI 1984, *T-4113*, AMO!
OHTER RECORDS: COLOMBIA: Without locality, *Ortiz Valdivieso s.n.*, digital photo in Gallery of Colombian Orchids. **ECUADOR:** Without locality, *Hirtz s.n.*, slide, AMO! "PERU", *Jameson 177*, illustration, W-R 5814!

***EPIDENDRUM SANTACLARENSE* Ames** Plate 1382

OTHER SPECIMENS: MÉXICO: Chiapas: Pueblo Nuevo Solistahuacan, 2000 m, 5 XII 1972, *Breedlove 29959*, CAS! Pueblo Nuevo Solistahuacán, 2020 m, 19 VIII 1986, *Palacios 163*, AMO! CHIP! Cerro Tres Picos, 2100-2350 m, *Soto 2602*, AMO x3! (Illustration.) **GUATEMALA: Escuintla:** Volcán de Pacaya, above Las Calderas, 1800-2400 m, 30 XI 1938, *Standley 58490*, AMES! **Chiquimula:** Miramundo, 2600 m, 10 IX 1977, *Hágsater 5366*, AMO x2! (Illustration voucher). ENCB! MEXU! Montaña Miramundo, 2000 m, 4 XII 1934, *Steyermark 32831*, AMES! **Zacapa:** Volcán Gemelos, 2100-3200 m, 26 I 1942, *Steyermark 43285*, AMES! **EL SALVADOR: Santa Ana**: Vulcano Santa Ana, 2000 m, 3 VII 1971, *Hamer 198*, AMES! **COSTA RICA: Alajuela:** San Ramón, Res. Biol. Alberto Brenes, 900 m, 1 VI 1996, *Blanco 682*,USJ! San Ramón, La Palma de San Ramón, 1150 m, 20 V 1927, *Brenes 1593*, AMES! CR! NY! Reserva de San Ramón, 8 XII 1984, *Dressler 287*, USJ! **Heredia:** Cerros de Zurqui, 2000-2400 m, 3 III 1926, *Standley 50810*, AMES! US! Ibid. *Standley 50842*, AMES! US! **San José:** Fila del Cedral, Cerro Daser, 20 III 1982, *Hágsater 6842*, AMO x2! INB! Alto Hierbabuena, 1950-2100 m, 17 IV 1993, Morales 1313, AMO x2! **PANAMÁ: Chiriquí:** Cerro Punta, 2000-2300 m, 15 III 1981, Hágsater 6483, AMO x2! Cerro Punta, 2200 m, 23 I 1984, *Werff 6245*, AMO!

***EPIDENDRUM SCULPTUM* Rchb.f.** Plate 1383

OTHER SPECIMENS: BELIZE: Toledo: Punta Gorda-Seven Hills Road, 30 XI 1944, *Gentle 5029*, LL! San Antonio, 24 XI 1945, *Gentle 5431*, LL! Machaca-Río Grande, 17 XII 1949, *Gentle 6937*, LL! San Antonio, 1 XII 1951, *Gentle 7536*, LL! **NICARAGUA: Zelaya:** bridge over Río Mico on the road to Rama, 300 m, *Heller 3719*, SEL x2! **COSTA RICA:** [**Alajuela:**] San Mateo, *Endres s.n.*, W-R! **Limon:** Hamburg Finca, ca. 55 m, 19 II 1922, *Standley 48922*, AMES! US! **Puntarenas:** Orillas del Río Ceibo, 150 m, 2 X 1983, *Hágsater 7642*, AMO x2! (Illustration voucher, flowers in spirit) ENCB! MEXU! USJ! Buenos Aires, 300 m, 7 VIII 1980, *Ocampo 2764*, CR! Golfo Dulce-Río Terraba, 30 m, 1 XII 1947, *Skutch 5344*, US! Río Esquinas, Golfo Dulce, 19 VIII 1990, *Soto s.n.*, USJ! Península de Osa, Rancho Quemado, Sierpe, 24 X 1990, *Soto 4079*, USJ x2! Sierpe, 0-100 m, 2 VIII 1979, *Todzia 655*, CR x2! **PANAMA: Colon:** Río Chagres, Juan Mina, 80 ft, 24 VIII 1947, *Allen 5076*, SEL! Quebrada López, 200 ft, 4 XI 1947, *Allen 5146*, MO! **Panama:** Fort Randolph, 0 m, 1 IX 1951, *Butcher s.n.*, AMES! Vigía, Río Pequení, 66 m, 27 XI 1934, *Dodge 16583*, AMES! G! K-L! MO! S! U! UC! Río Pequení, 10 XII 1974, *Dressler 4870*, AMO! Janine, Río Canita, *Duke 3887*, MO! Cañazas-Sábalo, ca. 100 m 26 IX 1967, *Duke 14492(2)*, MO! Gatun Lake, 0 m, *Powell 116*, K-L MO! Gatun Lake, 0 m, 1 VIII 1923, *Powell 3407*, AMES! Ibid. *Powell 3410*, AMES! Barro Colorado Island, 1 I 1931, *Shattuck 558*, MO! Fort Clayton-Corozal, 31 XII 1923, *Standley 29099*, AMES! US! Las Cascadas Plantation, 4 I 1924, *Standley 29693*, US! **San Blas:** Río Kwadi, Mulatupu, ca. 100 m, 20 IX 1967, *Duke 14235*, MO! **Veraguas:** San Juan, 0 m, 1 IX 1923, *Powell 3429*, AMES! **COLOMBIA: Valle del Cauca:** Buenaventura, 0 m, 5 VI 1944, *Killip 38819*, US! **Nariño:** Tumaco, caserío de Trujillo, 9 VI 1955, *Romero 5132*, COL! **VENEZUELA: Delta Amacuro:** 33 km al E del Río Grande, 320 m, *Steyermark 93061*, VEN? **GUYANA:** Dimerara River, 1 VIII 1890, *Jameson 6178*, AMES! **SURINAM:** Marowijne, 29 III 1949, *Lanjouw 2965*, U! **Para:** Coropinakreek, 18 V 1972, *Tenuissen 1251*, U! Para river, Fransina savanna, 26 XII 1974, *Teunissen 1443*, SEL! Para, *Wullschlaegel 1122*, W-R 42408! W-R 43485! **Saramacca**, Coesewijneriver, 5 IV 1976, *Teunissen 1589*, SEL! **Suriname:** Powakka, 26 XII 1972, *Tenuissen 1393*, U! **GUYANA FRANCESA**: without locality, 1 V 1901, *Lemes s.n.*, P! **ECUADOR:** Puyo-Tena, 3 VIII 1978, *Ackerman 1285*, SEL! **Esmeraldas:** Mangrove, Río Limones, 1 m, 1 VII 1982, *Dodson 13107*, SEL! **Sucumbios:** Imuya Cocha on Río Lagarto Cocha, 220 m, *Dodson 18833*, MO! **Napo:** Yasuni National Park, 150 m, *Dodson 17874*, MO! Jatun Sacha, 380 m, 9 VIII 1992,

Rueda 1034, QCNE! La Cruz, Arajuno, Puerto Misahualli, 500 m, *Suárez 164*, MO! **Pastaza**: Puerto Napo-Puyo, 500 m, 30 V 1986, *Dodson 16478*, MO! **BRAZIL: Amazonas:** Baixo Solimoes, 1 VII 1965, *Richter s.n.*, HB! Río Parauari (tributary of Maues-Acu), 16 VII 1983, *Todzia 2348*, NY! **Para:** Tucuruí, Vila Sta. Rosa, 1 IV 1981, *Bastos 415*, MG! Trombetas, rio Cuminá-mirim, 24 V 1957, *Egler 205*, HB! Represa Tucuruí-Breu Branco, 90 m, 16 III 1980, *Plowman 9640*, F! MG! SEL! **Mato Grosso:** Aripuaná, 1 IV 1979, *Lima 525*, HB! **BOLIVIA: Pando:** Madre de Dios: Río Sena, VIII 1996, *Vásquez 2769*, (VASQ, illustration xerox copy AMO!)

EPIDENDRUM SPATHATUM Schltr. Plate 1388

OTHER SPECIMENS: Without data, Hort. Royal Botanic Gardens Glasnevin, 23 II 1899, K-L! Ibid. *1426*, W-R 50191! **COLOMBIA: Cauca:** entre Popayán y Puracé, cultivada en Colomborquídeas, 2500 m, *Escobar 5049*, AMO! Coconuco, 6 XI 1968, *Espinal 3230*, CUCV! F! Popayán, *Hartweg 1426,* K-L x2! Cordillère Occidentale, versant Est, 2200-2800 m, 27 XI 1899, *Langlassé 98b*, K-L! P! Palacé [Puracé], *Lehmann 274*, K-L! L! Popayán,1800-2300 m, XII 1906, *Lehmann 6086*, K-L! **ECUADOR:** Without locality, *Sodiro s.n.*, QPLS x8! Forest of the Andes, *Jameson 736*, AMES! K-L! **Carchi**: Tulcán-Maldonado, 2600 m, 1 VIII 1985, *Dodson 16143*, MO! QCA! QCNE! Ibid. *Dodson 16144*, MO! Ibid. 2200-2400 m, 28 II 1974, *Harling 12299*, AMES! GB! Maldonado, 2200-2400 m, 28 II 1974, *Harling 12317*, GB! Tulcán-Maldonado, 2100-2200 m, 20 V 1973, *Holm-Nielsen 6055*, AAU! AMES! S! SEL! Ibid. 2000-2200 m, 25 XI 1985, *Luther 944*, SEL! **Cotopaxi:** Corazón, 2000-2500 m, 14 I 1881, *Lehmann 229*, G! W-R! Silante, W of Corazón, 1800-2500 m, XII 1892, *Lehmann 8185*, K-L! LE! **Imbabura**: Hda. La Florida, 1900-2500 m, 27 VIII 1992, *Álvarez 597*, AMO! Otavalo-Selva Alegre, 2400 m, 6 XII 1986, *Dodson 16682*, AMO! MO! QCNE! SEL! Otavalo, 6000 ft, 25 XI 1943, *Drew E-30*, AMES x2! Intag, 6500 ft, 9 VII 1944, *Drew E-521*, AMES x4! Otavalo-Apuela, 2500, 3 XII 1975, *Madison 2300*, AMES! SEL! **Pichincha:** Without collector, Quito, LE! Niebly, XII 1887, *Sodiro s.n.*, QPLS! Guarumal, ca. 2100 m, 26 IV 1955, *Asplund 16046*, NY! Chiriboga-Guarumal, ca. 2000 m, 31 XII 1955, *Asplund 18966*, AMES! G! K-L! NY! Tandapi, 1500-2000 m, I 1979, *Besse 174*, SEL! Nono-Nanegal, 2400 m, 17 I 1982, *Balslev 2151*, AMES! NY! QCA! Santo Domingo road, ca. 6000-8000 ft, *Calhoun 9*, F! Ibid. ca. 8000 ft, 19 VI 1949, *Calhoun 124*, F! Calacalí, 1600 m, 7 IX 1988, *Cerón 4757*, QCNE! Río Saloya, 1600 m, 7 XII 1989, *Cerón 7971*, MO! QCNE! Reserva Forestal "La Favorita", 1600-1800 m, 8 III 1990, *Cerón 8959*, MO! QCNE! Chiriboga, 2100-2160 m, 16 II 1992, *Croat 72188*, MO! QCNE! Quito-Chiriboga, 14 III 1963, *Dodson 2372*, QCA! SEL! Quito-Santo Domingo, 2600 m, 21 I 1981, *Dodson 10578*, SEL! Quito-Santo Domingo vía Chiriboga, 2670 m, 15 V 1981, *Dodson 10871*, SEL! Quito-Santo Domingo, 2500 m, 10 X 1984, *Dodson 15561*, MO! QCNE! Ibid. Chiriboga, 2300 m, 3 V 1985, *Dodson 15829*, MO! Chiriboga, *Fagerlindi 1861*, S! Sto. Domingo-Quito, 2800 m, 1 II 1974, *Gentry 9497*, MO! (Illustration voucher). QCNE! Mindo, pressed cult. 27 IX 1981, *Hágsater 5910*, AMO! (Illustration AMO, ENCB) Ibid. pressed cult. 19 V 1982, *Hágsater 5910*, AMO! Ibid. pressed cult. 8 II 1984, *Hágsater 5910*, AMO! Ibid. pressed cult. 7 X 1985, *Hágsater 5910*, AMO! Tandapi, col. 11 III 1980, pressed cult. 3 IV 1982, *Hágsater 6058*, AMO! Ibid. pressed cult. 7 XI 1984, *Hágsater 6058*, AMO! QCNE! Ibid. pressed cult. 15 I 1989, *Hágsater 6058*, AMO! Ibid. pressed cult. 4 V 1990, *Hágsater 6058*, AMO x2! Ibid. pressed cult. 14 VI 1991, *Hágsater 6058*, AMO x2! Ibid. pressed cult. 29 III 1992, *Hágsater 6058*, AMO! Ibid. pressed cult. 29 V 1992, *Hágsater 6058*, AMO x2! Aloag-Sto. Domingo, 8650 ft, col. 8 VI 1983, pressed cult. 8 II 1984, *Hágsater 7556*, AMO! Ibid. pressed cult. 10 V 1985, *Hágsater 7556*, AMO! Ibid. 23 XI 1987, *Hágsater 7556*, AMO! Ibid. pressed cult. 5 VI 1992, *Hágsater 7560*, AMO x2! Cuicocha-Selva Alegre, 2550 m, 6 XII 1986, pressed cult. 6 X 1991, *Hágsater 8960*, AMO x3! entre Nono y Tandayapa, 2200 m, 5 XII 1986, *Hágsater 8867*, AMO! Ibid. *Hágsater 8869*, AMO! Ibid. pressed cult. 26 I 1992, *Hágsater 8869*, AMO x2! Ibid. *Hágsater 8875*, AMO! Cornejo Astorga, 2300 m, 7 V 1968, *Harling 9354*, AMES! GB! Tandayapa-Nono, ca. 1900 m, 26 I 1974, *Harling 11622*, GB! Nono, 2200-2400 m, 27 I 1977, *Harling 14867*, GB! Nono-Tandayapa, 2300-2700 m, 28 I 1982, *Harling 20000*, AMES! GB! Chiriboga, 2100-3000 m, 5 IV 1942, *Haught 3221*, AMES! US! Saloya, 29 XI 1933, *Heinrichs 548*, M! Nieblí, 21 X 1920, *Holmgren 938*, AMES! Calacalí-Nanegalito, 1800-2000 m, 19 I 1989, *Hurtado 1437*, MO! Ibid. *Hurtado 1441*, MO! QCNE! Mt. Pichincha, 7000 ft, *Jameson s.n*. K-L! Quito, *Jameson 726*, W-R 50180! (with some flowers of *E. porphyreum*) Andes du Quito, *Jameson 776*, Gx2! Santo Domingo, 7000 ft, *Lehmann 105*, W-R! Chiriboga ca. 1900 m, 22 III 1979, *Løjtnant 11276*, AAU! Quito-Santo Domingo, ca. 2700 m, 13 III 1976, *Luer 843*, SEL! Tandapi, 2500 m, 31 III 1985, *Luer 11018*, MO! Calacalí-Nanegalito, 2100 m, *Palacios 3589*, QCNE! MO! Chiriboga-Dos Ríos, 951-1863 m, 4 II 1949, *Scolnik 1617*, AMES! Río Alambí-Nanegal, 2000 m, 27 XII 1987, *Molau 2215*, GB! QCA! Niebli, *Sodiro 66/1371*, AMES x2! Saloya-Santo Domingo, 1800 m, 4 II 1945, *Solís 12053*, F! Aloag-Santo Domingo, 2000 m, 11 II 1967, *Sparre 14329*, S! Ibid. *Sparre 14343*, S! Nono-Nanegal, Río Alambí, 2200-2500 m, 7 V 1967, *Sparre 15960*, S! Nono, 2300 m, 26 V 1985, *Stein 2862*, MO! QCNE! Río Saloya, 1830-2430 m, 22 IV 1963, *Steyermark 52514*, AMES! Fx2! El Pahuma, 2000 m, 19 X 1999, *Suin 361*, MO! Ibid. 26 X 1999, *Suin 376*, MO! Río Alambi, 2300 m, 13 III 2000, *Suin 548*, MO! Nanegalito, 2225 m, 2 IX 1993, *Webster 30098*, QCNE! Nanegalito, 2000 m, 12 I 1995, *Webster 31181*, SEL!

OTHER RECORDS: COLOMBIA: Without locality data, *Ortíz Valdivieso s.n.*, digital photo in Gallery of Colombian Orchids. **ECUADOR: Carchi:** Maldonado, *J.* + *L. 792-387*, spirit, AMO! **Pichincha:** Alambi [Río Alambi], 5 X 2002, *Newman s.n.*, spirit, AMO!

EPIDENDRUM STANGEANUM Rchb.f. Plate 1389

OTHER SPECIMENS: GUATEMALA: Petén: Izabal, 2 m, 21 XI 1982, *Duarte 82-494*, AGUAT! USCG! **NICARAGUA: Boaco:** Cerro Mombachito, 500-900 m, 8 X 1979, *Stevens 14764*, MO! **Chontales:** Santo Tomas, 200-500 m, 29 XII 1969, *Atwood 2716*, BM! F! UC! San Pedro de Lóvago, 260 m, 6 IV 1982, *Moreno 16050*, MO! La Libertad, 500-700 m, 29 V 1947, *Standley 8903*, F! Juigalpa-La Libertad, 350-400 m, 23 IX 1977, *Stevens 4113*, F! MO! La Gateada-Nueva Guinea, 210 m, 1 XI 1977, *Stevens 4924,* MO! **Granada:** Finca Gutiérrez, 600 m, 3 X 1976, *Neill 995;* MO! **Matagalpa:** Cerro Musún, 300 m, 12 II 1979, *Stevens 12015,* MO! **Zelaya:** Cerro Wailawas, 100-268 m, 4 V 1978, *Stevens 8772,* MO! **COSTA RICA: Alajuela:** Laguna de Cuarto, 400 m, 5 XI 1984, *Gómez-Laurito 10211*, F! Río Cucaracho, 500 m, 4 XI 1987, *Herrera 1132*, AMO x2! **Guanacaste:** Tilarán, 500-650 m, 10 I 1926, *Standley 44178*, US! El Arenal, 485-600 m, 18 I 1926, *Standley 45121*, US! Aguilares, 600 m, 20 I 1926, *Standley 46352*, US! **Heredia:** La Selva, 29 IX 1985, *Atwood 85-13*, USJ! La Selva, 50 m, 7 IV 2000, *Blanco 1490*, USJ! La Selva, 50-150 m, 15 IX 1979, *Todzia 710*, F! MO! Ibid. 16 IX 1979, *Todzia 726*, F! MO! **Limón:** Matina, Río Danta, 200-300 m, *Herrera 2189*, AMO x2! San Carlos, Venecia, 30 IX 1979, *Ocampo 2461*, CR! **Puntarenas:** Osa, Palmar Norte, 0 m, 6 II 1949, *Allen 5358*, US! **PANAMA: Coclé:** Valle de Anton, 600 m, 25 IX 1941, *Allen 2757*, AMES! **Panamá:** Cerro Trinidad, 800-1000 m, 20 XII 1946, *Allen 3770*, G! MO! Barro Colorado Is., 28 XI 1931, *Shattuck 454*, F! MO! **Veraguas:** Isla de Coiba, 22 IX 1970, *Foster s.n.*, Herb. Dressler! **COLOMBIA: Valle del Cauca:** Cajambre, 0 m, 1906, *Lehmann 192,* K-L! Buenaventura, 0 m, *Lehmann*

441, K-L! **ECUADOR: Esmeraldas:** Sto. Domingo-Esmeraldas, 100 m, 13 IX 1980, *Dodson 10430*, SEL! Limones, 0 m, 10 II 1982, *Dodson 13108*, SEL! El Muisne, 50 m, 17 VIII 1986, *Dodson 16578*, MO! QCNE!

OTHER RECORDS: COSTA RICA: Illustration by Rafael Lucas Rodriguez 439, xerox and silde at AMO! **Cartago:** Turialva, el Dos de Santa Teresita, 660 m, 16 III 1994, *Salazar s.n.*, spirit and Illustration voucher, AMO! **NICARAGUA: [Atlánico Sur:]** road to Río Mico, 11 VII 1967, *McCullough 1294*, color slide, AMO! Heller notes, *Heller 1109, 3300* (ill.) & *8168,* copy at AMO!

EPIDENDRUM STROBILIFERUM Rchb.f. Plate 1390

OTHER SPECIMENS: ESTADOS UNIDOS: Florida: [Collier] Naples, III 1904, *Ames s.n.*, NY! Deep Lake, 12 IX 1950, *Brewer s.n.*, FLAS! Fahkahatchee Swamp, V 1974, *Luer 177*, SEL! Deep Lake, 07 XII 1925, *Small 12709*, NY! [Collier] Fahkahatchee Slough, *Ward s.n.*, FLAS! Fahkahatchee Slough, 22 IX 1965, *Ward 5359*, FLAS! **Lee:** Everglade, 23 III 1905, *Eaton 1386*, NY! **MÉXICO: Veracruz:** Hidalgotitlán Camp. Hnos. Cedillo, 150 m, 18 IV 1974, *Valdivia 342*, XAL x2! Camp. Hnos. Cedillo, 160 m, 21 V 1974, *Valdivia 536*, XAL! Camp. Hermanos Cedillo, 160 m, 25 V 1974, *Valdivia 724*, MEXU! XAL! Camp. Hnos. Cedillo, 160 m, 27 V 1974, *Valdivia 753*, XAL Camp. Hnos. Cedillo, 155 m, 19 VI 1974, *Valdivia 820*, MEXU! XAL x2! Camp. Hnos. Cedillo, 150 m, 06 VIII 1974, *Valdivia 1280*, XAL! Camp. Hnos. Cedillo, 160 m, 28 I 1975, *Valdivia 1919*, XAL! **Campeche:** Hopelchén Dos Aguadas, Biosfera de Calakmul, 16 III 1991, *Vean 6974*, UADY! **Chiapas:** Estación Chajul, 150 m, 28 X 1992, *Martínez 25545*, AMO! Bonampak, 350 m, 07 VI 1982, *Meave B-615*, AMO! Laguna Lacanja-Chansa-lla, 160 m, 25 X 1985, Sinaca 291, AMO! MEXU! (Illustration, AMO) **Quintana Roo:** Dos Lagunas, 100 m, 17 III 1984, *Andrews 88*, AMO! Tres Garantías, 28 I 1999, *Carnevali 5418*, AMO! Ejido Nuevo Progreso, ca. 50 m, 28 XI 1998, *Hágsater 12152*, AMO! (Illustration voucher) Tres Garantías, 28 I 1999, *Sánchez 605*, AMO x2! **BELIZE:** Stann Creek, 21 XII 1937, *Gentle 2154*, AMES! MICH! Columbia road 28 XII 1946, *Gentle 6130*, LL! Toledo, 31 X 1951, *Gentle 7502*, LL! Orange Point-Moho River, 19 IV 1952, *Gentle 7654*, LL! **GUATEMALA:** Virginia, 01 III 1929, *Lewis 15*, AMES! **Peten:** La Libertad, 28 III 1933, *Lundell 2128*, MICH! La Libertad, 29 III 1933, *Lundell 2142*, AMES! MICH! La Libertad, 07 IV 1933, *Lundell 2597*, AMES! MICH! **Alta Verapaz:** Chama, 900 ft [275 m], 15 X 1920, *Johnson 861*, AMES! US! Verapaz and Chiquimula, *Watson 101*, AMES! **HONDURAS: Atlántida:** Lancetilla Valley, 250 ft [73 m], 16 III 1923, *Ames s.n.*, AMES! Lancetilla Valley, 20-600 m, 06 XII 1927, Standley 52993, AMES x2! **NICARAGUA: Chontales;** Babilonia Mine, 2100 ft [642 m], *Heller 7959*, SEL! 200 mi up the Wanks river, 1929, *Schramm s.n.*, F! **Jinotega:** Pantasmi River, 1600 ft [489 m], *Heller 1907*, SEL! **Zelaya:** Prizapolca river, Limbaikan, 02 I 1970, *Atwood 2853*, AMES! F! **COSTA RICA: Heredia:** La Selva, 50-150 m, 29 XI 1978, *Todzia 1059*, CR! **Puntarenas:** Puerto Jiménez, 3 IV 1930, *Cufodonti 150*, W-R! Volcán Buenos Aires, 475 m, 21 IV 1956, *Williams 19245*, SEL! **Limon:** Hamburg Finca, 55 m, 19 II 1926, *Standley 48741*, AMES! US! Ibid. *48770*, AMES! US! Ibid. *48930*, AMES! US! **PANAMÁ: Panamá:** Jaque, 01 IV 1953, *Griffin s.n.*, AMES! Chepo, 30 m, 27 I 1935, *Hunter 224*, MO! Barro Colorado Island, 05 XI 1931, *Shattuck 550*, MO! Barro Colorado Island, 02 XII 1923, *Standley 25747*, AMES! US! **CUBA:** Cienfuegos, I 1902, *Hugo B. s.n.*, AMES! Limones, I 1904, *Gray s.n.*, AMES! Santa Catalina, 17 X 1905, *Hermann 3267*, HAC! Matanzas, XII 1822, *Poeppig s.n.*, W-R! **Pinar del Rio:** Buenaventura, 18 XII 1910, *Wilson 9391*, AMES! U! **Las Villas:** Cumanayagua, 14 VII 1953, *Dressler 1323*, UC! **Oriente:** La Prenda, VII 1919, *Hno. Hioram 2585*, HAC! HAJB! Quirijan, arroyo Barbudo, 18 II 1978, *Bisse 37050,* HAJB! Holguín, 100 m, 19 IV 1981, *Bisse 44560*, HAJB! Sierra Cristal, 400-500 m, 02 V 1981, *Bisse 45576*, HAJB! Charrascos junto al Curso Río Miguel, 02 IV 1956, *Hno. Alain 5929*, HAC! **JAMAICA**: Cockpit, 13 IX 1906, *Britton 434*, AMES! St. Ann, ca. 2000 ft [612 m], *Hágsater 11242*, AMO! Belvedere, Hanover, 500 ft [153 m], 11 I 1899, *Harris 7519*, BM! Ibid. 160 m, 13 VI 1899, *Harris 7543*, BM! NY! **HAITI:** Los Haitises, 200-250 m, *Dod 1117*, Herb. Dod! Parq National Citadelle, 750-800 m, *Dod 1222*, Herb. Dod! Parque Nacional de los Haitises, 0-50 m, *Dod 1699*, Herb. Dod x3! Parque Nacional Los Haitises, 5-25 m, *Dod 1735*, Herb. Dod! Massif de la Lotte, 150 m, 14 VIII 1928, *Ekman 10516*, AMES x2! G! S! US! **DOMINICAN REPUBLIC:** San Francisco de Macoris, 23 II 1980, *Dod s.n.*, AMO x2! La Vega-Jarabacoa, 500 m, *Dod 931*, Herb. Dod x3! Loma Nalga de Maco, 1300 m, *Dod 1066*, Herb. Dod! Sierra de Baoruco, 250-850 m, *Dod 1365*, Herb. Dod! Monción, 500-750 m, *Dod 1443*, Herb. Dod! Miches, 300-750 m, *Dod 1599*, AMO! (Illustration) Herb. Dod x3! Santo Domingo, 23 VI 1887, *Eggers 2620*, BR! Los Guanavitos, La Cumbre, 05 V 1929, *Ekman 12376*, AMES! NY! US! S! Barahona, I 1911, *Fuertes 9206*, L! Barrero, 700-750 m, 04 IX 1986, *García 1718*, AMES! Sánchez Ramírez, Near Cevicos, 12 V 1956, *Jiménez 3355*, US! Guarabito de Yaroa, 300-500 m, 01 V 1968, *Liogier 11013*, AMES! NY! Los Cacaos, 250 m, 15 III 1969, *Liogier 14428*, AMES! Bayaguana, 100 m, 01 V 1969, *Liogier 15039*, AMES! P! Los Haitises, Boca del Infierno, 0 m, 30 VII 1973, *Liogier 19809*, NY! Barahona, Finca Sucesión, La Filipina, 800 m, 03 I 1977, *Liogier 26152*, NY! Santo Domingo, III 1871, *Wright 571*, US! Maniel, 750 m, 16 I 1985, *Zanoni 33060*, AMES! Los Haitises, en El Coco, 0-20 m, 24 IV 1985, *Zanoni 34254*, NY! **PUERTO RICO:** Adjuntas, 2 V 1886, *Sintenis 4281*, L! **DOMINICA:** Layou River Valley, 07 I 1966, *Chambers 2513*, AMES! BM! E! US! Bella, 17 IV 1988, *Whitefoord 6135*, BM! Mt. Jov to abandoned L'Imprevue Estate, 400 m, 19 II 1940, *Hodge 1278*, AMES! **MARTINIQUE:** Without locality, *Hahn 1473,* W-R!, Ajoupa-Bovillon, *Duss 1023*, NY! **GRENADA:** St.George's, III 1906, *Broadway 1857*, BR! AMES! **GUADELOUPE:** *Questel 5046*, AMES! **TRINIDAD & TOBAGO:** Without locality, W-R! Chanquanes, 12 IV 1892, *Alexander s.n.*, AMES! Arima, 18 III 1920, *Britton 655*, AMES! US! Mt. Tamana, 18 IV 1936, *Britton 1964*, AMES! US! Santa Cruz, 21 XII 1907, *Broadway s.n.*, BM! Arima, 16 VI 1908, *Broadway s.n.*, BR! G! Adelphi, 13 V 1913, *Broadway s.n.*, AMES! G! S! US! W-R! St. Annes, 01 I 1919, *Broadway s.n.*, AMES! Arina, 14 IV 1908, *Broadway 2332*, AMES! Santa Cruz, 28 I 1911, *Broadway 4118*, AMES! Maraval, 01 III 1926, *Broadway 6287*, P! Maraval, 05 III 1926, *Broadway 6300*, AMES! BM! S! UC! US! Nestor Village, 11 II 1955, *Downs 7*, AMES! Curiaea Rd., 27 XII 1948, *Simmonds 315*, AMES! Angushire, 25 IV 1949, *Simmonds 349*, AMES! **NETHERLANDS ANTILLES: Saba:** Rendes-vous, 23 IV 1885, *Buringar s.n.*, L! **COLOMBIA: Boyacá:** Pauna, 1000 m, 9 II 1946, *Schneider 342*, AMES! **Meta:** Sierra de La Macarena, río Güejar, 490 m, 22 II 1956, *Idrobo 2040*, COL! Sierra La Macarena, 400 m, 23 XI 1962, *Idrobo 4808*, COL! Pto. Chamusa, , 460 m, 9 XI 1975, *Idrobo 8486*, COL! Cordillera Macarena, Río Güejar, ca. 400 m, 22 II 1937, *Renz 4182*, RENZ! **VENEZUELA: Barinas:** Santa Barbara-Rio Quiu, 200 m, 11 X 1949, *Renz 5985*, RENZ! **Bolivar:** El Dorado-Santa Elena, 150 m, 23 XI 1959, *Bernardi 7216*, G! Raudaul Ouraima, 175 m, 16 I 1952, *Maguire 33151*, AMES! NY! Cerro Venamo, 1400 m, 03 I 1964, *Steyermark 92696*, AMES! **Mérida:** Santa Barbara-Sabaneta, 300 m, 27 X 1949, *Renz 6014*, RENZ! **Miranda:** Los Alpes, 1200 m, 08 XI 1956, *Renz 8795*, RENZ! Los Alpes-Guatopo, 1100 m, 28 II 1960, *Renz 9802*, RENZ! **Portuguesa**: Río Ano, La Plaza, 350 m, 14 XI 1951, *Renz 7530*, RENZ! **Sucre:** Agua Caliente, 100 m, 01 II 1960, *Renz 9778*, RENZ! **GUYANA:** Mt. Everard, 12 II 1922, *De la Cruz 1312*, AMES! NY! Yarikita and Amakura rivers, 17 I 1920, *Hitchcock s.n.*, AMES! Yarikita and Amakura rivers, 17 I

1920, *Hitchcock s.n.*, AMES! Yarikita and Amakura rivers, 17 I 1920, *Hitchcock 17625*, AMES! Kamakusa, 07 XII 1922, *Lang 327*, F! Berbice River, New Dageraad, 01 X 1981, *Maas 5406*, U! Demerara River, III 1923, *Persaud 44*, F! HB! West-Demerara, Maruba Hill, 0-50 m, 10 IV 1985, *Steege 196*, U! **SURINAM:** Without locality, *Splitgerber 13*, L! Wilhelmania Mountains, 750 m, 11 VII 1980, *Determann 195*, SEL! Zandreij-Hannover, 10 X 1958, *Donselaar 257*, U! Coppename, 10 IX 1961, *Hekking 998*, U! Jodensavanne, 12 II 1957, *Heyligers 292*, U! Nature Reserve Sipaliwini, 10 III 1972, *Tenuissen 1182*, U! Tout Lui Faut, 04 IV 1972, *Tenuissen 1224*, U! Paramaribo, *Wullschlaegel 565*, BR! W-R x2! Bleyendal, *Wullschlaegel 566*, BR! **GUYANA FRANCESA:** Without locality, *Melinon s.n.*, P! Cayenne, 19 V 1921, *Broadway 22*, AMES! Cayenne, 27 VI 1921, *Broadway 584*, AMES! US! Cayenne, 24 VII 1921, *Broadway 952*, AMES! Tumuc Humac, 670 m, 15 VIII 1972, *Granville 1263*, CAY! P! Monpé Soula-Bassin du Haut-Marouini, Autour du Saut, 160 m, 6 IX 1987, *Granville 10087*, CAY! Camp No. 1 Soula-Bassin du Haut-Marouini, 150 m, 24 VIII 1987, *Granville 9660*, CAY! Monpé Soula-Bassin du Haut-Marouini, 200 m 01 IX 1987, *Granville 9937*, CAY! Troits Sauts (Haut Cypock), Zidock, 13 VIII 1974, *Grenand 477*, CAY x2! Saul, Mont Galbao, 180-210 m, 05 VII 1986, *Montfoort 37*, CAY! Rivière Comte, Etienne, 17 VII 1967, *Oldeman B-1073*, CAY! P! Sinnamary, Ste. Elie, 17 VII 1977, *Sastre 5490*, CAY! P! Saut Macaque, 05 IX 1961, *Schnell 11809*, P! Ibid. 13 IX 1961, *12149*, COL! P x2! Troit Sauts, *Veyret 1349*, CAY! Savane Gabrielle, 28 VIII 1976, *Veyret 1399*, CAY x2! P! Pays indienne, 28 XI 1965, *Veyret 1439*, CAY! P! **ECUADOR: Napo:** Cuyabeno Nature Reserve, 240 m, 12 XI 1982, *Asanza 41190*, AAU! QCA! QCNE! Parque Nacional Yasuni, 230 m, 09 I 1988, *Cerón 3206*, QCNE! Jatun Sacha, 450 m, 17 II 1988, *Cerón 3746*, QCNE! Jatun Sacha, Misahualli, 400 m, 23 I 1989, *Cerón 5972*, QCNE! Aguarico Reserva Etnica Huaorani, 270 m, *Dik 933*, QCNE! Tena, 580 m, 30 V 1986, *Dodson 16471*, MO x2! Yasuni National Park, 280 m, 21 I 1988, *Dodson 17361*, MO! Sancudo Sacha Pacha, 230 m, *Dodson 18908*, MO! Cuyubeno, Laguna Grande, 200 m, 06 XI 1987, *Hekker 10122*, U! Puerto Napo, 600 m, 27 VII 1975, *Luer 429*, SEL! Jatun Sacha, 450 m, 2 X 1986, *Palacios 1384*, QCNE! Tena Jatun Sacha, 400 m, 26 VI 1991, *Palacios 7511*, QCNE! **Pastaza:** Curaray, 300 m, *Gudino 778*, MO! QCNE! Río Tinguino, *Hurtado 1451*, MO! Montalvo, Río Bobonaza, ca. 250 m, 21 V 1979, *Løjtnant 13600*, AAU! **PERU: Loreto:** Iquitos, Río Apayacú, 10 IV 1987, *Pinto 6277*, COL! Cochiquiná, 14 IV 1987, *Pinto 6421*, COL! Yanayaco, 120 m, 09 VIII 1980, *Vásquez, 411*, SEL! **Cuzco:** Pilcopata, Atalaya, 650 m, 15 I 1987, *Nuñez 6868*, CUZ! SEL! **Madre de Dios:** Tambopata Nature Reserve, ca. 260 m, 03 V 1980, *Barbour 5103*, AAU! NY! SEL! Río Manu, Cocha Cashu Station, 350 m, 24 VII 1984, *Foster 9696*, MO! **BRASIL: Roraima:** Uaicá, Río Uraricoeira, 28 II 1971, *Prance 10768*, HB x2! Río Uraricoera, Cachoeira Cigarra, 27 II 1979, *Murca 16796*, MG! **Amapá:** Río Araguari, 12, 29 IX 1961, *Pires 51318*, MG! Río Flechal, 13 VIII 1962, *Pires 52506*, MG! Igarapé do Lago, Macapá, 20 X 1980, *Rabelo 747*, MG! **Amazonas***:* Santarem, 2 IX 1927, *Hagmam 681*, WU! Anavilhanas, 6 X 1978, *Madison 58*, HB! Islas de Anavilhanas, Igapó, 6 X 1978, *Madison 6058*, SEL! Tabatinga, Río Soliodes, *Prance s.n.*, HB! **Pará:** Tucurui, 15 XI 1981, *Daly 1353*, SEL! Altamira (PA), Río Iriri, Río Xingu, 17 VIII 1986, *Dias 20a*, MG! Porto do Larajal, 1 XII 1985, *Lins 106*, MG! Santana do Araguaia 100 km south of Redencao, 210 m, 19 II 1980, *Plowman 8933*, F! MG! Almeirin Monte Dourado, 4 XII 1978, *Santos 471*, MG! Almeirim, Monte Dourado, 6 XII 1978, *Santos 492*, MG! NY! Marabá Carajás, Río Itacaiunas, 15 IX 1984, *Silva 28*, MG! Ilha do Marajo, 27 X 1984, *Sobel 4823*, SEL! Río Iriri, Igarapé de Pedro Arcangelo, 22 VIII 1986, *Souza 61*, MG! Macau, Río Maicuru, ca. 800 ft [244 M], 25 VII 1981, *Strudwick 3549*, MG! SEL! Ananindeua, 1 V 1964, *Vieira 22*, HB! **Acre:** Tarauacá, 24 IX 1968, *Prance 7520*, HB! **Rondonia:** Pte. Médici-Costa Marques, 7 III 1986, *Rosa 5058*, MG! Alvorada-Costa Marques, 28 VI 1983, *Silva 6488*, MG! **Matto Grosso:** Río Angelim, 14 IV 1894, *Lindman 2909*, S x2! **Minas Gerais:** Ouro Preto, Camarinhas, 21 I 1951, *Macedo 3063*, RB! **Sao Paulo:** Jureia, 0-700 m, 1 XI 1983, *Argent 677*, E! Cananéia, Ilha do Cordoso, 8 VI 1983, *Barros 829*, SP! Cananéia, Ilha do Cordoso, 9 XI 1979, *De Grande 218*, SP! Ubatuba, 31 V 1975, *Gottsberger E 2od*, HB! Ubatuba, Praya Grande, 30 V 1975, *Gottsberger 30575*, HB! **Río de Janeiro:** Itatiaia, 1 V 1942, *Brade s.n.*, RB! **Paraná:** loco non notato, 6 II 1910, *Dusén s.n.*, AMES! S! Jacarehy, I 1909, *Dusén 8894*, S! Jacarely, 24 III 1911, *Dusén 11375*, L! Ibid. I 1908, *11377*, AMES! L! S! Jacarchy, 24 VI 1914, *Dusén 15213*, AMES! S! Nerretes Marumbi, 4 I 1978, *Hatschbach 41835*, UC! Antonina Cacatu, 17 II 1985 *Hatschbach 48918*, AMES!

EPIDENDRUM UMBELLATUM Sw. Plate 1396

OTHER SPECIMENS: CUBA: Guantánamo: Pico Cordero, 1000-1300 m, 13 V 1971, *Bisse 18956*, HAJB! Cuchillas de Toa, 22 III 1972, *Bisse 22866,* HAJB x2! Los Naranjos-Loma de Buenavista, 21 I 1977, *Bisse 33786,* HAJB x2! Sierra de Nipe, Loma de la Mensura, 31 X 1977, *Bisse 35791,* HAJB! Los Naranjos-Cuchilla 9 III 1982, *Bisse 48056,* HAJB x2! **Oriente:** Sierra de Nipe, 600-700 m, 16 X 1941, *Acuña 3229,* HAC! Sierra del Cobre, 25 IX 1935, *Acuña 9793,* HAC! Loma del Gato, 10 VII 1936, *Acuña 11278,* HAC! Copas de Collanter, *Acuña 11436,* HAC! Pico Turquino, 1 VIII 1935, *Acuña 13891,* HAC! La Gran Piedra, 29 X 1959, *Acuña 21254,* HAC! Pico Galano, 1 I 1954, *Alain 3794,* HAC! Cuchilla de la Sierra del Frijol, 1 I 1954, *Alain 3797,* HAC! Loma del Gato, *Clement 494,* HAC! US! La Coronita, Florida Blanca, 1 IV 1957, *Clemente 5275,* HAC! Cieneguita, 28 II 1896, *Combs 2,* AMES! Pico Sombrero, Sierra Trinidad, 19 VII 1953, *Dressler 1337,* MO! US Daiquirí, La Gran Piedra, ca. 1000 m, 28 X 1916, *Ekman 8097,* S! Sierra de Nipe, Loma Mensura, 725 m, 15 X 1919, *Ekman 9921,* S! Loma de La Quijada Bayate de Monte Ruz, 23 II 1955, *López 1458,* HAJB! Alto de la Valenzuela, 4800-5000 ft, 5 IV 1955, *López 2063,* HAJB! Pinalón, Alto de la Valenzuela, 11 VIII 1955, *López 2283,* HAC! HAJB! (Illustration voucher) Monteverde, Guantánamo, 30 XII 1960, *López 2491,* HAC! HAJB! La Perla, 28 XII 1919, *Hoiram 2669,* HAC! NY! Oriente, *Hoiram 10949,* HAC! Loma del Gato, 1 XII 1935, *Hoiram 14016,* AMES! HAC! US! San Pedro de Castillo, Maisi, 1 IX 1938, *Matos 18558,* AMES! HAC! Bella Vista-Monte Libano, 1 I 1907, *Maxon 4271,* US! María Tomasa, La Bayamesa, 25 IX 1989, *Risco s.n.,* HAC x2! Sierra Nipe, Woodfred, 10 XII 1909, *Shafer 3145,* AMES! La Perla-Santa Ana, 660 m, 14 II 1911, *Shafer 8608,* AMES! NY! La Perla, *Shafer 8659,* NY! La Manaión, 28 I 1971, *Stuchlik s.n.,* PR! Gran Piedra, 10 X 1983, *Vasiljev s.n.,* AMO! Monte Verde, *Wright 72,* P! W-R! Cuba Orientali, *Wright 642,* BR! HAC! P! Ibid. 1 VII 1856, AMES! G x2! Ibid. 7 IX 1857, HAC x2! Ibid. 1 I 1860, BM! Monte Verde, 1 I 1860, *Wright 1483,* W-R! Ibid. *Wright 1498,* G! Ibid. *Wright 1690,* G! **Pinar del Río:** Valley of Taco-Taco, 1 I 1953, *Liogier 2750,* AMES! **Santa Clara:** Las Lagunas, Buenos Aires, ca. 2500 ft, 5 XII 1928, *Jack 6880,* AMES! Buenos Aires, Trinidad Hills, 2500-3500 ft, 24 VII 1930, *Jack 8109,* AMES! Ibid. *Jack 8110,* AMES! Lomas de Trinidad, *León 18499,* HAC! Sierra de Gavilanes, 1 IV 1916, *León 66217,* HAC! Lomas de Banao, 1 II 1920, *Luna 258,* NY! **Santiago de Cuba:** Caldero-Pico Cuba, 1600-1750 m, 23 VII 1984, *Álvarez 54919,* HAJB! **JAMAICA:** Mt. Manys, *Without collector 143,* E! Manchester, 3 IX 1908, *Britton 3160,* NY! Mandeville, 15 II 1910, *Brown 31,* NY! Ibid. *Brown 178,* NY! Silver Hills, 4000 ft, II 1908, *Harris 7865,* BM! F! Mocho Mts., Thompson, ca. 2000 ft, 4 IV 1952, *Proctor 6513,* IJ! Mosely Hall Cave, Blackstonedge, ca. 2000 ft, 12 XII 1952, *Proctor 7480,* IJ! Bog Hole, Corner Shop, 1700 ft, 31 VII 1967, *Weaver 1266,* AMES! **HAITI:** Mornes des Cammissaires, 1500 m, 13 XII 1944, *Holdrige 2053,* AMES! F! NY! St. Michel de L'Atalaye, La Loma, ca. 900 m, 2 VI 1927, *Ekman 8337,* K-L! US! **DOMINICAN REPUBLIC:** Prov. La Vega, Jarabacoa, 3000 ft, 15 IV 1981,

Zanoni 12586, MO! **PUERTO RICO:** Bandera, 14 VII 1915, *Stevens 8258,* NY! **SAN KITTS-NEVIS:** Molyweaut State, 8 IX 1901, *Britton 330,* NY! **MONTSERRAT:** Soufrière, 8 II 1907, *Shafer 691,* F! US! **GUADALOUPE:** Without locality, 1 I 1854, *Perrotet s.n.,* BM! **DOMINICA:** Mt. Joy to abandoned L'Imprevue State, 400 m, 19 II 1940, *Hodge 1260,* AMES! **MARTINIQUE:** Without locality, 12 XII 1962, *Botata 6154,* P! St. Pierre, 1 II 1868, *Hahn 86,* BM! Ibid. 1 I 1872, *Hahn 1337*, AMES! Ibid. 1 II 1868, *Pierre 86,* AMES! **SANTA LUCIA:** Without locality, *Plez s.n.,* P! Morne Soufrière, 1100 ft, 6 XI 1938, *Box 1851,* BM! Gimie, Piton, Troumassée, 1300-1400 ft, 22 XI 1960, *Proctor 21616,* AMES! Mt. Durocher, Patience, 1050 ft, 15 V 1984, *Slane 120,* AMES! **SAN VICENTE:** 1500 ft, 1 III 1890, *Smith 1009,* BM! NY! Ibid. *Smith 1150,* AMES! **GRENADA:** St. George's, 1 II 1906, *Broadway 1852,* AMES x2! F! **TRINIDAD & TOBAGO:** Trinitatis, 1 I 1826, *Sieber 379,* E! P! W-R x2!

APPENDIX 2: Corrections to earlier volumes

Eric Hágsater

Epidendrum diommum Hágsater & Chocce, **Icon. Orchid. (Mexico)** 12: pl. 1238. 2009. The holotype was indicated as lodged at USM. Unfortunately that specimen is sterile, and in addition it has been separated and mounted on two different sheets. The original sheet is USM 130369, and thus should be considered the holotype. The new sheet is USM 239076 and should be considered as an isotype. As stated in the original description, the illustration was prepared from the duplicate at MO 04887701, proposed as an isotype.

Epidendrum x doroteae P.H.Allen, was illustrated in **Icon. Orchid. (Mexico)** 11: pl. 1119. 2008. In that paper we noted that we had not been able to find the holotype, and proposed the designation of a neotype. Recently Cyril H. Nelson and Eydi Y. Guerrero have discovered the holotype at EAP, and therefore propose that the type be cited as: Hills east of the Yeguare Valley, Department of Francisco Morazan, Honduras, 3200 ft. elevation in pine-oak woods. October 28, 1957. Only one plant seen, epiphytic on *Quercus*. *[Paul and Dorothy] Allen 6786*. Holotype EAP. An illustration of the type is included in their publication. This makes the designation of a neotype superfluous. In addition, they suggest that the original spelling be retained, as *E. x doroteae*. Reference: Nelson Sutherland, C.H., y Guerrero, E.Y.: Redescubrimiento del holotipo de *Epidendrum x doroteae* P.H. Allen, **Ceiba** 50 (1): 47-49. 2009.

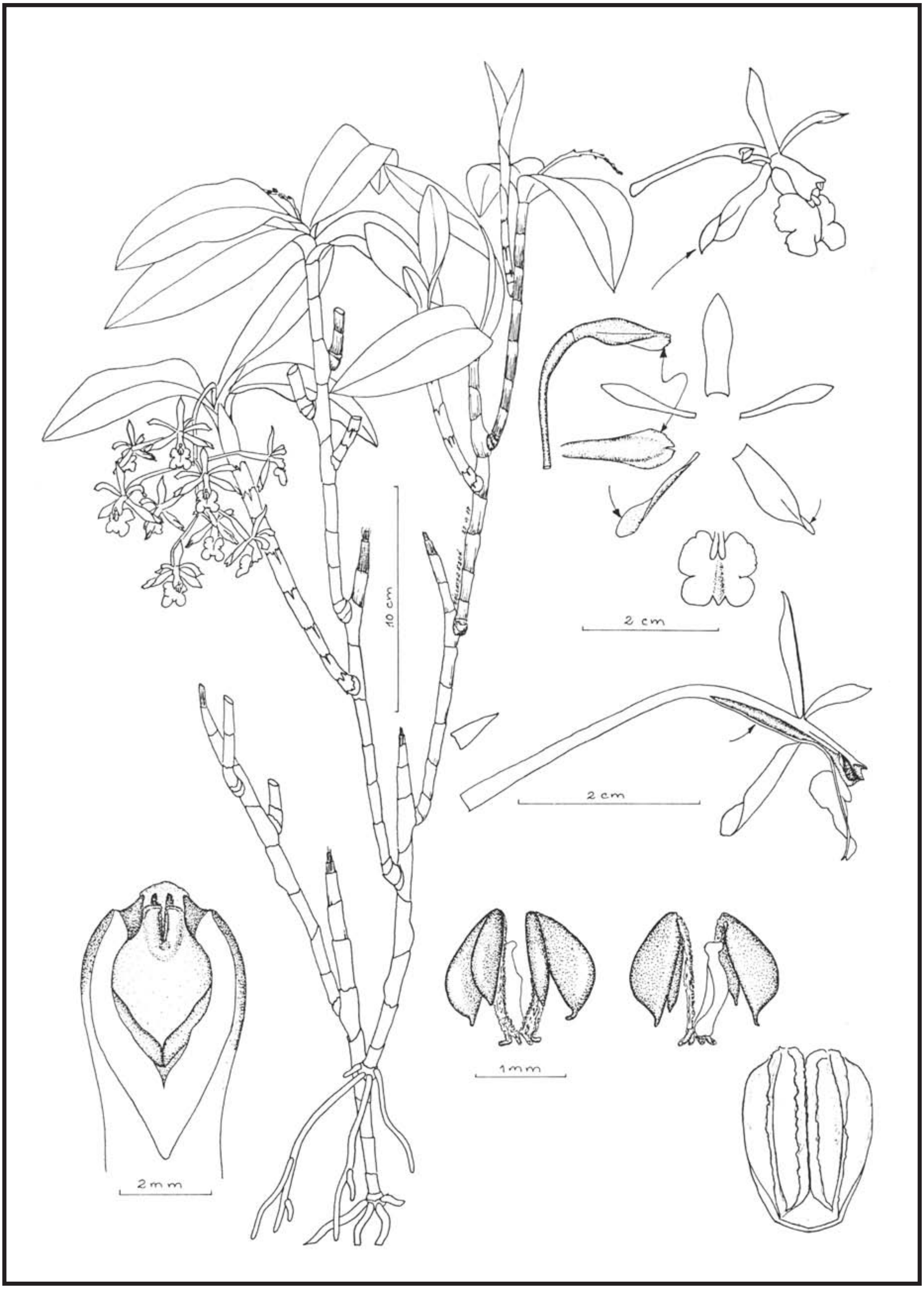
Epidendrum hagsateri Christenson was previously illustrated as *Epidendrum pugioniforme* Regel in **Icon. Orchid. (Mexico)** 1: pl. 39. 1990. Christenson later discovered that that name corresponded to the well-known *Epidendrum parkinsonianum* Hook., and thus reduced it as a synonym, proposing the new name *Epidendrum hagsateri* for the species from southern Mexico. We produce a new version with updated information.

Epidendrum parkinsonianum Hook., previously published in **Icon. Orchid. (Mexico)** 1: pl. 37. 1990 is here reproduced taking into consideration the new synonym, and extensive citation of specimens seen throughout its range is provided.

Publication dates

Volume 12 was published 16 December 2009

Volume 13 is published 10 December 2010, both in hard copy and available on the internet at www.herbarioamo.org



EPIDENDRUM ALABASTRIALATUM G.E.Pollard ex Hágsater **Plate 1301**

EPIDENDRUM ALABASTRIALATUM G.E.Pollard ex Hágsater, Orquídea (Mexico City) 7(1):19. 1978.

Type: OAXACA: Santo Domingo Zanatepec; Colonia Rodolfo Figueroa, Cerro Baúl, 4400 ft, 22 April 1967, in bloom 29 June 1976, ***Glenn. E. Pollard R-33***. Holotype: AMO! Clonotypes: 2 VII 1970: AMO! *Glenn E. Pollard R-33 sub E. Hágsater 5204*. 26 VI 1976: ENCB! (Illustration voucher) SEL! 1 VII 1978 AGUAT! 29 VI 1980: AMES! G! IBUG! M! W-R! 23 VI 1981: BR! P! XAL! 17 VII 1984: K-L! MEXU! MICH! MO! NY! SEL! US! 19 VII 1986: CR! K-L! *Glenn E. Pollard R-33 sub Hágsater 9918*, 30 VII 1996: AMO! F!

Hierba epífita o litófita, simpodial, erecta, donde cada tallo nuevo se origina de un entrenudo intermedio subapical del tallo anterior, hasta de 80 cm de alto. **Raíces** de la base de los tallos inferiores, ausentes en las ramificaciones, carnosas, gruesas, blancas, 4 mm de grosor. **Tallos** algo ramificados, tipo caña, erectos, teretes, rectos, 3.0-19 x 0.3-0.8 cm. **Hojas** 2-4, agrupadas hacia el ápice del tallo; vainas tubulares, finamente estriadas, escariosas, fibrosas con el tiempo, 1.7-2.0 x 0.3-0.8 cm; lámina articulada, lanceolada, aguda, margen entero, subcoriácea, 2.5-11 x 1-3.6 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, arqueado nutante, 6-8 cm de largo; pedúnculo ligeramente lateralmente aplanado, 2-2.5 cm de largo, ocasionalmente provisto en la base de una bráctea angostamente triangular, acuminada, 6-8 mm de largo; raquis terete, delgado, recto, 4-6 cm de largo. **Brácteas florales** mucho más cortas que el ovario, angostamente triangulares, acuminadas, 4-7 mm de largo. **Flores** 8-15, simultáneas, resupinadas, sépalos y pétalos amarillo verdoso, columna y labelo blancos, callo amarillo anaranjado; el ápice de la columna con dos pequeñas manchas triangulares moradas; fragancia ligera, agradable, diurna. **Ovario** terete, delgado, liso, ligeramente engrosado unos 10 mm detrás de los sépalos, 25-60 mm de largo. **Sépalos** extendidos, libres, angostamente obovados, agudos, margen entero; el **dorsal** algo panduriforme, margen ligeramente revoluto, 14-19 x 4-4.5 mm; los **laterales** ligeramente oblicuos, con una carina dorsal muy prominente, erosa, que ocupa el tercio apical de los mismos, 5-nervados, ramificados desde la base dando la apariencia de ser 9-nervados, margen extendido, 16-21 x 4-5 mm. **Pétalos** extendidos, libres, linear oblanceolados, agudos, con una carina dorsal baja, 7-nervados, margen entero, 14-17 x 2-2.5 mm. **Labelo** unido a la columna, subcuadrado en aspecto general, 4-lobado, los lóbulos basales casi a tan anchos como los apicales, base cordada, ápice mucronado, 11-12 x 11-12 mm; bicalloso, los callos delgados, cortos; disco provisto de una carina intercallosa baja, lisa, alargada hasta el seno apical; lóbulos basales reniformes suborbiculares, margen eroso, 4.5-5 x 6-6.4 mm; lóbulos apicales suborbiculares, margen entero, 4.5-5 x 4.5-5.5 mm. **Columna** recta, delgada en la base, gradualmente más ancha hacia el ápice, 9 mm de largo. **Clinandrio** corto, margen entero. **Antera** ovoide, 4-locular. **Polinios** 4, semiovoideos, apiculados, lateralmente comprimidos, cerosos, el par interior mas pequeño, caudículas más largas que los polinios; viscidio semilíquido. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de ½ del largo de la cavidad estigmática. **Nectario** penetrando ¼ del ovario, no inflado, liso. **Cápsula** elipsoide, cuerpo 3.5 x 1.8 cm.

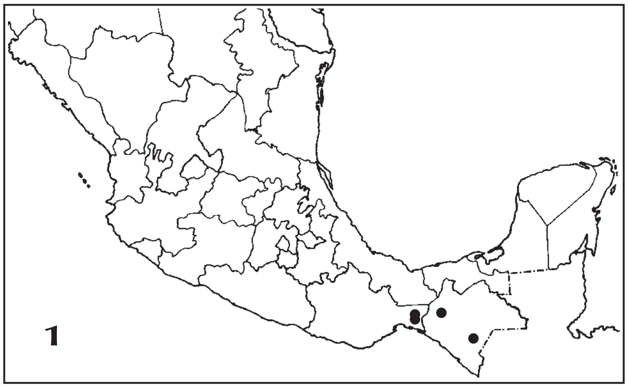
Epiphytic or lithophytic, sympodial **herb**, where the new growth originates from an intermediate sub-apical internode of the previous growth. **Roots** from the base of the lower stems, fleshy, thick, white. **Stems** cane-like, erect, terete, straight, somewhat branching. **Leaves** 2-4 bunched near the apex of the stem; sheaths tubular, minutely striated, scarious, fibrous with time; blade articulate, lanceolate, acute, margin entire, sub-coriaceous. **Inflorescence** apical, flowering only once, racemose, arching, nutant; peduncle slightly laterally flattened, short, occasionally provided at the base with a narrow, triangular, acuminate bract; rachis terete, thin, straight. **Floral bracts** much shorter than the ovary, narrowly triangular, acuminate. **Flowers** 8-15, simultaneous, resupinate, sepals and petals greenish yellow, column and lip white, callus orange-yellow, the apex of the column with two small triangular purple spots; fragrance slight, agreeable, during daytime. **Ovary** terete, thin, smooth, slightly thickened apically. **Sepals** spreading, free, narrowly obovate, acute, margin entire, the **dorsal** somewhat pandurate, margin slightly revolute; the **lateral** somewhat oblique, with a prominent, erose dorsal keel that occupies about the apical 1/3, 5-veined, branching from the base so as to appear 9-veined, margin spreading. **Petals** spreading, free, linear-oblanceolate, acute, with a low dorsal keel, 7-veined, margin entire. **Lip** united to the column, sub-quadrate in outline, 4-lobed, the basal lobes nearly to as wide as the apical lobes, base cordate, apex mucronate; bicallose, the calli thin, short, disc provided with a low, smooth keel which reaches the apical mucro; lateral lobes reniform sub-orbicular, margin erose; apical lobes sub-orbicular, margin entire. **Column** straight, thin at the base, gradually thickened towards the apex. **Clinandrium-hood** short, margin entire. **Anther** ovoid, 4-celled. **Pollinia** 4, semi-ovoid, apiculate, laterally compressed, waxy, the inner pair smaller, caudicles longer than the pollinia, granulose, viscidium semi-liquid, transparent. **Rostellum** apical, slit. **Nectary** penetrating ¼ of the ovary, smooth.

OTHER SPECIMENS: MEXICO: Oaxaca: Cerro Guayabitos, 1450 m, 7 VIII 1984, *Maya 383*, AMO! Cerro Quetzal, 1600-1800 m, 11 VII 1986, *Maya 3582*, MEXU! **Chiapas:** Ventana, near Siltepec, 2100 m, 25 VII 1941, *Matuda 4543,* MEXU! MO! Faldas del Cerro Tres Picos, al SW de Villa Flores, 1320-1350 m, 13 VII 1987, *Soto 3188,* AMO! El Suspiro (Ejido Vista Hermosa) al NE de Berriozabal, 15 IV 1989, *Soto 5218,* AMO!

OTHER RECORDS: MEXICO: Oaxaca: Colonia Rodolfo Figueroa, Cerro Baúl, 4400 ft, 18 VII 1967, *Pollard R-33*, photographs, Pollard notes, AMO!

DISTRIBUTION AND ECOLOGY: Endemic to southern Mexico (border between Oaxaca and Chiapas), epiphytic and lithophytic at 1300-2100 m altitude in Pine-Oak-*Liquidambar, Cedrella-Liquidambar-Oecopetalum*, or *Dendropanax-Calophyllum* forest. Flowering in June-August.

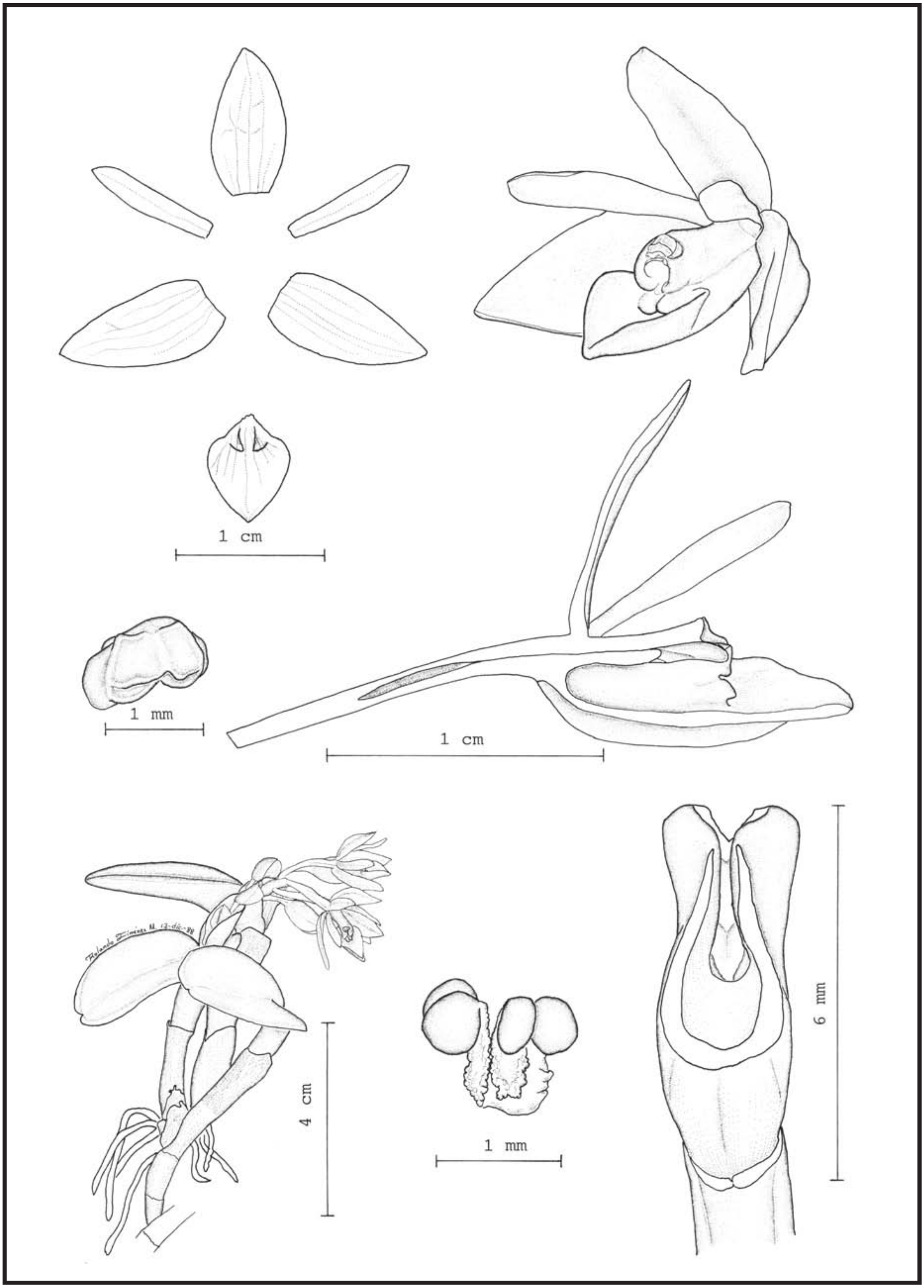
RECOGNITION: *Epidendrum alabastrialatum* belongs to the Arbuscula Group, Arbuscula Subgroup which is characterized by the successive lateral growths produced from the middle of the previous growth, few leaves aggregate towards the apex of the stems, arching, apical inflorescence with membranaceous, colorful flowers, the lip bicallose. The species is recognized by the 4-lobed lip with the four sub-orbicular lobes about equal in size, and the lateral sepals 16-21 mm long, with a prominent dorsal keel which gives the floral buds a winged aspect, the simultaneous flowers are greenish yellow with a white lip and column, the calli orange-yellow. *Epidendrum nicaraguense* Scheeren ex Hágsater is morphologically very similar, but the flowers are pale pink and turn orange yellow, the calli yellow, fragrant, and flower between December to February. *Epidendrum arbuscula* Lindl. has a more dense inflorescence, shorter ovaries, 3-lobed lip with the mid-lobe emarginate, 15 mm long sepals, the three sepals dorsally keeled and thus the floral bud is 3-winged, the flowers are fragrant at night. *Epidendrum greenwoodii* Hágsater has more robust plants, a longer inflorescence, orange-ochre flowers with the lip white towards the base, the apical lobes are narrow, a weak nocturnal fragrance and short ovary. *Epidendrum camposii* Hágsater also has a longer, dense inflorescence of some 20-45 pink to rosy white flowers which turn yellowish, the lip white and the lip 3-lobed.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *alabastrum*, floral bud, and *alatum*, winged, in reference to the prominently two-winged floral bud.

Authors: E. Santiago & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM AMETHYSTINUM Rchb.f. **Plate 1302**

EPIDENDRUM AMETHYSTINUM Rchb.f., Gard. Chron. 1867: 376. 1867.

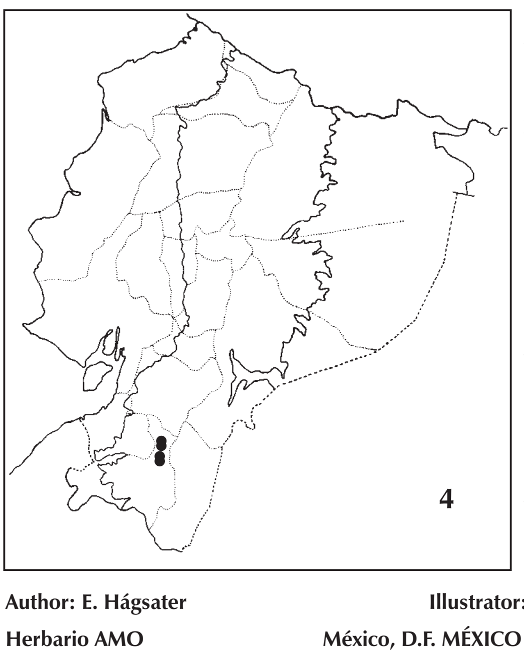
Type: Ecuador: [Loja]; Sacama, 9000 ft., 26 April 1866, Hort. Backhouse, York, ***Herrn Krause 10***.
Holotype: W-R 4731!

Hierba epífita, simpodial, cespitosa, 10-16 cm de alto. **Raíces** basales, carnosas, delgadas, 1 mm de grosor. **Tallos** sencillos, tipo caña, algo engrosados, lateralmente comprimidos, rectos, ca. 5 cm de largo. **Hojas** 3-5, (frecuentemente las inferiores caedizas, quedando el tallo con 2-3 en la floración), alternas, distribuidas a todo lo largo del tallo, vaina tubular, lisa, hasta de 0.6-1.6 cm de largo; lámina foliar articulada, elíptica, ápice bilobado, coriácea, lisa, verde, algo teñida de morado; progresivamente más grandes, 3-5.3 x 0.8-2.2 cm. **Bráctea espatácea** subrectangular (sin extenderse), los lados paralelos, conduplicada, ápice redondeado, de 18-25 x 8 mm. **Inflorescencia** apical, del crecimiento maduro, florece una sola vez, arqueada, 5-7 cm de largo, pedúnculo totalmente cubierto por la bráctea espatácea. **Flores** 8-11, resupinadas, sucesivas, abriendo progresivamente desde el ápice hacia la base de la inflorescencia, coloración guinda, translúcida, el labelo más claro internamente, la antera oscura, sin fragancia. **Bráctea floral** mucho mas corta que el ovario, pequeña, triangular, aguda, ca. 1 mm de largo. **Ovario** no inflado, de sección circular, no ornamentado, 12-14 mm de largo. **Sépalos** entreabiertos, libres, ovado oblongos, obtusos, apiculados, 3-nervados, con nervaduras secundarias cortas a los lados, márgenes enteros, extendidos, con quilla dorsal baja, membranáceos, glabros, algo cimbiformes en posición natural, márgenes extendidos; 10-11 x 4.8-5.5 mm, los **laterales** agudos, ligeramente enteros oblicuos. **Pétalos** entreabiertos, angostamente elíptico subligulados, ápice obtuso, membranáceos, 1-nervados, márgenes enteros, extendidos; 9 x 2 mm. **Labelo** unido a la columna, entero, cordiforme a ovado, ápice agudo, cimbiforme en posición natural, 6 x 5.2 mm; bicalloso, los callos prominentes, corniformes e incurvados hacia el tercio de la lámina. **Columna** recta, gruesa, 5 mm de largo incluyendo el clinandrio, ventralmente engrosada con la uña del labelo para formar un nectario amplio. **Clinandrio** reducido, entero. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** muy pequeños. **Nectario** muy corto, amplio, apenas penetrando hasta el perianto, liso, con néctar abundante derramándose en el labelo frente a los callos. **Antera** reniforme, 4 locular. **Polinios** 4, ovoideos, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, más largas que los polinios; viscidio semilíquido, transparente. **Cápsula** no vista.

Epiphytic, sympodial, caespitose, short **herb. Roots** basal, fleshy, thin. **Stems** simple, cane-like, somewhat thickened and laterally compressed, straight. **Leaves** 3-5 (the lower ones frequently falling off when young, leaving the stem with 2-3 at flowering), alternate, distributed throughout the stem; sheath tubular, smooth; blade articulate, elliptic, apex bilobed, coriaceous, smooth, green, somewhat tinged purple, progressively larger. **Spathaceous bract** sub-rectangular (without spreading), the sides parallel, conduplicate, apex rounded. **Inflorescence** apical, from the mature stem, flowering only once, arching; peduncle totally covered by the spathaceous bract. **Flowers** 8-11, resupinate, successive, opening progressively from the apex of the inflorescence towards the base, purple, translucent, the lip lighter inside, the anther darker. **Floral bracts** much shorter than the ovary, short, triangular, acute. **Ovary** not inflated, terete, smooth. **Sepals** partly spreading, free, ovate-oblong, apex obtuse, apiculate, 3-veined, with short secondary veins on the lateral veins, with a low dorsal keel, membranaceous, glabrous, somewhat cupped in natural position; the lateral sepals slightly oblique. **Petals** partly spreading, narrowly elliptic-sub-ligulate, apex obtuse, membranaceous, 1-veined, margins entire, spreading. **Lip** united to the column, entire, cordiform to ovate, apex acute, cupped in natural position; bicallose, the calli prominent, horn-like and incurved at about 1/3 the length of the lip. **Column** straight, thick, ventrally thickened, with the claw of the lip forming a wide nectary. **Clinandrium-hood** reduced, entire. **Nectary** very short, wide, reaching the perianth, smooth, with abundant nectar leaking over the calli. **Anther** reniform, 4-celled. **Pollinia** 4, ovoid, laterally compressed, sub-equal, caudicles soft and granulose, longer than the pollinia; viscidium semi-liquid, transparent.

OTHER SPECIMENS: ECUADOR: Without locality, *Hübsch 35*, W-R 13142! **Azuay:** Limón, cult. Paute, 1800 m, *A. Andreetta sub E. Hágsater 9742, C. H. Dodson 17834,* 24 XI 1988, AMO! QCA! (Illustration voucher). ibid. 25 XI 1989, MO! **Loja**: Las Juntas, 15 V 1882, *Poortmann 433*, P! Zwischen Loja Río Las Juntas, 7500-8000 ft, 1882, *Hübsch*, W-R 2117!

RECOGNITION: *Epidendrum amethystinum* belongs to the Ventricosum Group which is recognized by the sympodial habit, few leaved stem, prominent spathaceous bract, and the resupinate flowers mostly bright purple, with a wide, smooth nectary that does not penetrate de ovary. The species is recognized by erect, somewhat thickened stems with very coriaceous leaves, with a raceme of bright violet, crystal-like, flowers opening from the apex of the scape backwards, subtended by a single narrow, spathaceous bract; there is nectar overflowing from the nectary into the concave lip, in front of the calli; the color of the flowers is like that of *Nageliella*. *Epidendrum ventricosum* Lindl. has sub-caespitose habit, medium sized plants with ancipitose stems the leaves are long and narrow (4-12 x 0.3-0.8 cm), the lip is as wide as it is long, and the calli are small, about ¼th the length of the lip. *Epidendrum pachygastrium* Kraenzl. is very similar and is distinguished by the shorter, wider lanceolate leaves (3-8 x 0.6-1.0 cm), and the lip slightly wider than long and with the two large, sub-globose calli nearly half as long as the lip. *Epidendrum leimebambense* Hágsater, is also similar, but leaves are wider, up to 1.7 cm wide, flowers larger, sepals 14-16 mm long, pale green marked with purple, and lip cordiform, 8 x 11 mm. *Epidendrum diommum* Hágsater & Chocce from Peru is similar to the former, has magenta to wine-colored, non transparent flowers, with bright white calli and sepals 15.5-19 mm long. The plant habit is somewhat similar to that of *Epidendrum cupreum* Lehm. & Kraenzl. and *E orbiculatum* C. Schweinf., but these have green to brown flowers of a very different texture.



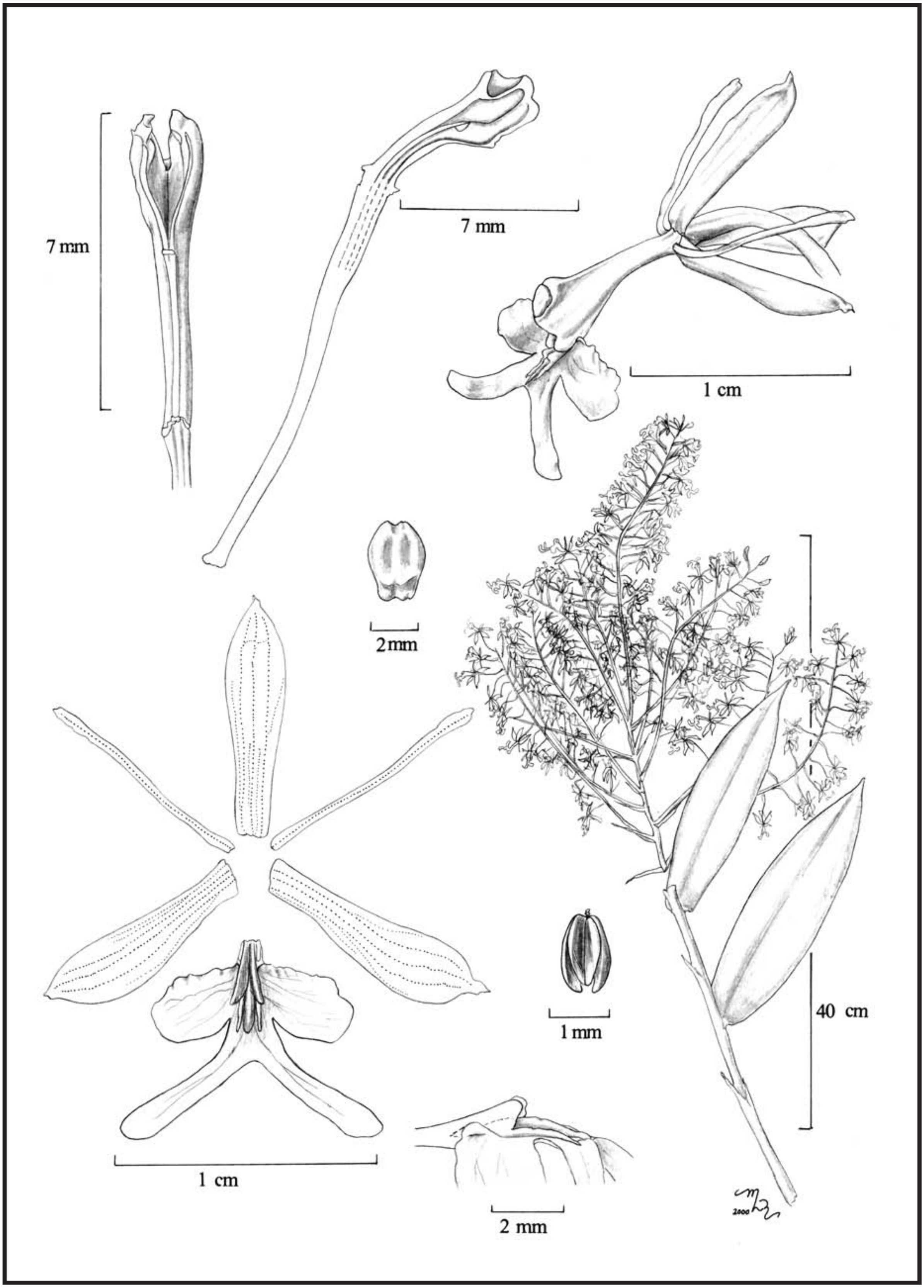
DISTRIBUTION AND ECOLOGY: Apparently highly restricted and endemic to Loja in southern Ecuador, on the upper western slope of the Andes, 1800-2800 m altitude in wet forests. Flowering in November.

ETYMOLOGY: From amethyst, a semi-precious stone of purple-violet color, in reference to the color of the flowers, which is bright "orchid color", like a *Cattleya skinneri*, and most probably humming-bird pollinated.

CONSERVATION STATUS: DD. Apparently rare and highly endemic, in a very disturbed area.

REFERENCES: Reichenbach, H. G., 1870. **Xenia Orch.** 2: 160-161, t. 167.

Author: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM AMPLUM D.E.Benn. & Christenson **Plate 1303**

EPIDENDRUM AMPLUM D.E.Benn. & Christenson, Lindleyana 13 (1). 36. 1998.

Type: PERU: Oxapampa, along road from Oxapampa to Pozuzo, 1350 m, August 1988, ***David Bennett & Amparo Bennett 4362***. Holotype: NY. Isotype: USM.

Synonym: *Epidendrum paniculatum* Ruiz & Pavón var. *longicrure* Lindl., Fol. Orch. Epid. 56. 1853. Based on (Peru) *McLean,* K-L! (Bolivia) *Bridges*, K-L! Not *Epidendrum longicrure* Schltr.

Hierba terrestre o litófita, simpodial, cespitosa de 100-220 cm de altura. **Raíces** no vistas. **Tallos** sencillos, tipo caña, erectos, teretes, de ca. 80-170 x 0.5-1.2 cm. **Hojas** numerosas, alternas, distribuidas en el 1/3 apical de los tallos; vaina tubular, estriada en seco, 3-6.5 cm de largo; lámina elíptica a lanceolada, aguda a acuminada, margen entero, coriácea, [7] 14-25 x [1.1] 3.4-6.5 cm, [las primeras y últimas hojas del tallo más pequeñas]. **Bráctea espatácea** ausente. **Inflorescencia** apical, paniculada, erecta, florece una sola vez, 28-50 cm de largo; raquis terete, lateralmente aplanado y adelgazado hacia la zona apical; provista de ca. 10 ramas extendidas (en las inflorescencias más grandes las ramas también ramificadas) de 10-23 cm de largo, cada una de ellas con una bráctea basal, triangular, acuminada, margen entero, 1.4-2.8[6.6] x 0.15-0.3 cm. **Flores** numerosas, ca. 200, 24-40 por racimo, simultáneas, resupinadas, de color violeta, fragancia dulce y fuerte. **Bráctea floral** mucho más corta que el ovario, aguda, 2-5 mm de largo. **Ovario** terete, delgado, no inflado, no ornamentado, 13-26 mm de largo. **Sépalos** reflexos, libres, espatulados, apiculados, margen entero y extendido, 3-nervado, con 2 nervaduras secundarias, 7.5-11 x 2.4-3.3 mm. **Pétalos** reflexos, libres, filiformes, redondeados, margen extendido, finamente eroso hacia el ápice, 1-nervados, 8.7-10.5 x 0.4 mm. **Labelo** unido a la columna, trilobado, ligeramente cordado, 4-8.0 x 8.5-12 mm; bicalloso, los callos laminares, alargados hasta cerca del ápice de los lóbulos laterales y continuando en las carinas laterales; disco tricarinado, las carinas laterales no tan prominentes como la central, más cortas, la central desvaneciéndose antes de llegar al seno apical; lóbulos laterales subrectangulares, redondeados, margen extendido, irregular, 2.4-4.5 x 2.4-3 mm; lóbulo medio bifurcado, divaricado; lóbulos falcados, redondeados, margen entero y extendido 5.4-9 x 1.1-1.5 mm. **Columna** arqueada, 7-8 mm de largo. **Clinandrio** reducido, entero. **Antera** obovoide, 4-locular. **Polinios** 4, tipo ala de pájaro, caudículas suaves y granulosas. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** pequeños. **Nectario** no visto. **Cápsula** no vista

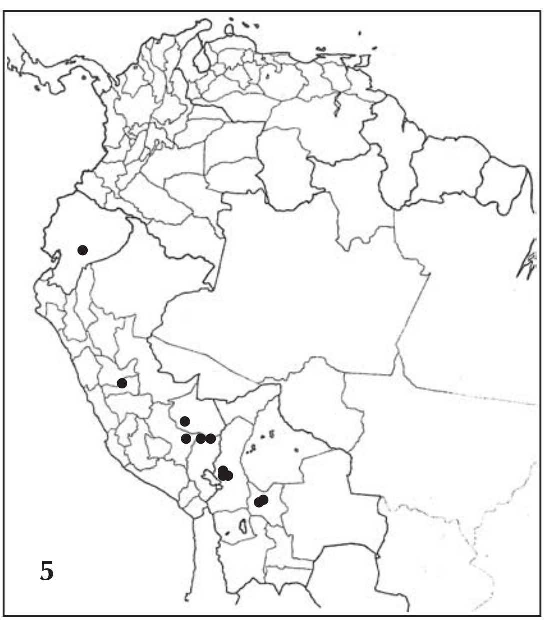
Terrestrial or lithophytic, simpodial, caespitose, tall **herb**. **Stems** simple, cane-like, erect, terete. **Leaves** numerous, alternate, sheath tubular, striated when dry; blade elliptic, acute, margin entire. **Inflorescence** apical, paniculate, suberect, flowering only once; rachis terete, laterally flattened towards the apex, much branched, each sub-tended by a large triangular, acuminate bract. **Flowers** numerous, ca. 200, simultaneous, resupinate, violet, with a strong, sweet fragrance. **Floral bract** much shorter than the ovary, acute. **Ovary** terete, thin. **Sepals** reflexed, free, spathulate, apiculate, margin entire and spread, 3-veined with 2 secondary veins. **Petals** reflexed, free, filiform, rounded, margin spread, minutely erose towards the apex, 1-veined. **Lip** united to the column, 3-lobed, slightly cordate; bicallose, the calli laminar, disc tri-carinate, the lateral keels smaller than the central one which disappears before reaching the apical sinus; lateral lobes sub-rectangular, rounded, margin spreading, irregular; mid-lobe bifurcate, divaricate, lobes falcate, rounded, margin entire, spreading. **Column** arcuate. **Clinandrium-hood** reduced, entire. **Anther** obovoid, 4-celled. **Pollinia** 4, bird-wing type, caudicles smooth and granular. **Rostellum** apical, slit.

OTHER SPECIMENS: BOLIVIA: *Florent Claes 5*, P! Río Bopi [Beni?], 3000 ft, 9 XI 1921, *McCreagh 584* AMES! Saymanta a Tarapi, *Mandon s.n.*, P! Quinchara, 1 VI 1865, *Pearce 762*, K-L! **Cochabamba:** Cochabamba-Chaparé km 135, 1200 m, IV 1961, *Cárdenas 5975*, K-L! US! WIS! Ayopaya, Ríos Altamachi y Malpaso, 1000-1100 m, 14 VIII 2001, *Vargas 6511*, MO! **La Paz**: Lacarejá: Vallée de Tipuani, 1854, *Weddell s.n.* P! Nor Yungas, zwischen Unduavi und San Villami, 2500 m, 01 X 1912, *Buchtien 3694*, AMES x2! F! G! NY! US! (Illustration voucher). Yungas, 1890, *Bang 635*, AMES! E! NY x2! US! Lacarejá, Mapiri, IV 1982, *Bang 1552*, AMES x2! E! F! G x4! K-L! LE! M! NY x2! MO! US! W-R! WU! Hacienda Canoma, sobre el camino a Tipuani, 6 X 1922, 1400 m, *Buchtien 7234*, US! Sud Yungas, Calisaya, 750-900 m, 1 VII 1939, *Stevens 10517*, AMES! F! NY! Bolivie septentrionale, Valle de Tipuani, 1851, *Weddell s.n.*, P! **Santa Cruz:** Los Monos, 3000 ft, 1 X 1955, *Nelson s.n.* AMES! **ECUADOR: Morona-Santiago:** Sta. Elena, 2900-3000 ft, 1 XI 1944, *Camp E-828*, AMES! NY x2! S! **PERU:** Without locality, *Lean s.n.*, K-L! **Cuzco:** Marcapata, 12 VIII 1944, *Vargas 4584*, AMES x2! CUZ! Marcapata, Cadena, 1020 m, 29 VII 1946, *Vargas 6193*, CUZ x3! USM! Santa Isabel, 1300 m, 7 VIII 1951, *Vargas 10255*, CUZ! **Pasco:** 24 km N of Huancabamba 1300-1400 m, *Gentry 40037*, MO! **Puno:** Ollachea abajo, 1200-2400 m, VII 1966, *Vargas 17593*, CUZ! **Madre de Dios:** between Quince Mil and Marcapata, ca. 800 m, 6 X 1987, *Kahn 2274*, USM! Alto Madre de Dios, 400 m, 19 VI 1957, *Rauh P1660*, AMES!

OTHER RECORDS: Hooker, "*Epidendrum paniculatum"* in Bot. Mag. 94: t. 5731. 1868. **BOLIVIA: Cochabamba:** Villa Tunari, IX 1996, *Page s.n.*, photo, AMO! **PERU: Pasco:** Oxapampa, *R. Fernández s.n.,* digital imagen, AMO!

DISTRIBUTION AND ECOLOGY: Ranging along the Amazonian slope of the Andes from southern Ecuador to Bolivia, between [400]1100 and 2900 m altitude. Flowering April to October.

RECOGNITION: *Epidendrum amplum* belongs to the Pseudepidendrum Group which is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, apical inflorescence, lacking a spathaceous bract, the petals filiform and the lip usually 3-lobed, with 3 parallel fleshy keels, the apical lobe often bifurcate, and the pollinia "bird-wing" type and Porphyreum Subgroup which has flowers colored reddish orange, deep purple or lilac-pink, the calli generally prominent, sometimes horn-like. The species is recognized by the tall plants, large panicle with numerous violet, very fragrant flowers (not mentioned by Bennett & Christenson), the sepals 7.5-11 mm long, and the leaves 3.4-6.5 cm wide; the apical lobes of the lip are much longer and narrower than the basal lobes. It closely resembles *E. jasminosmum* Hágsater & Dodson, which has pale green and snow-white flowers, slightly larger sepals (10-13 mm), narrower leaves (1.2-1.8 cm wide), and is found at 400-1350 m altitude in the Amazon basin in southern Ecuador and northern Peru. It has been confused with *Epidendrum atacazoicum* Schltr. from eastern Ecuador, which has a compact, pyramid-like inflorescence, with non-fragrant, rosy-lilac flowers with the lateral lobes of the lip proportionately shorter than the apical lobes.



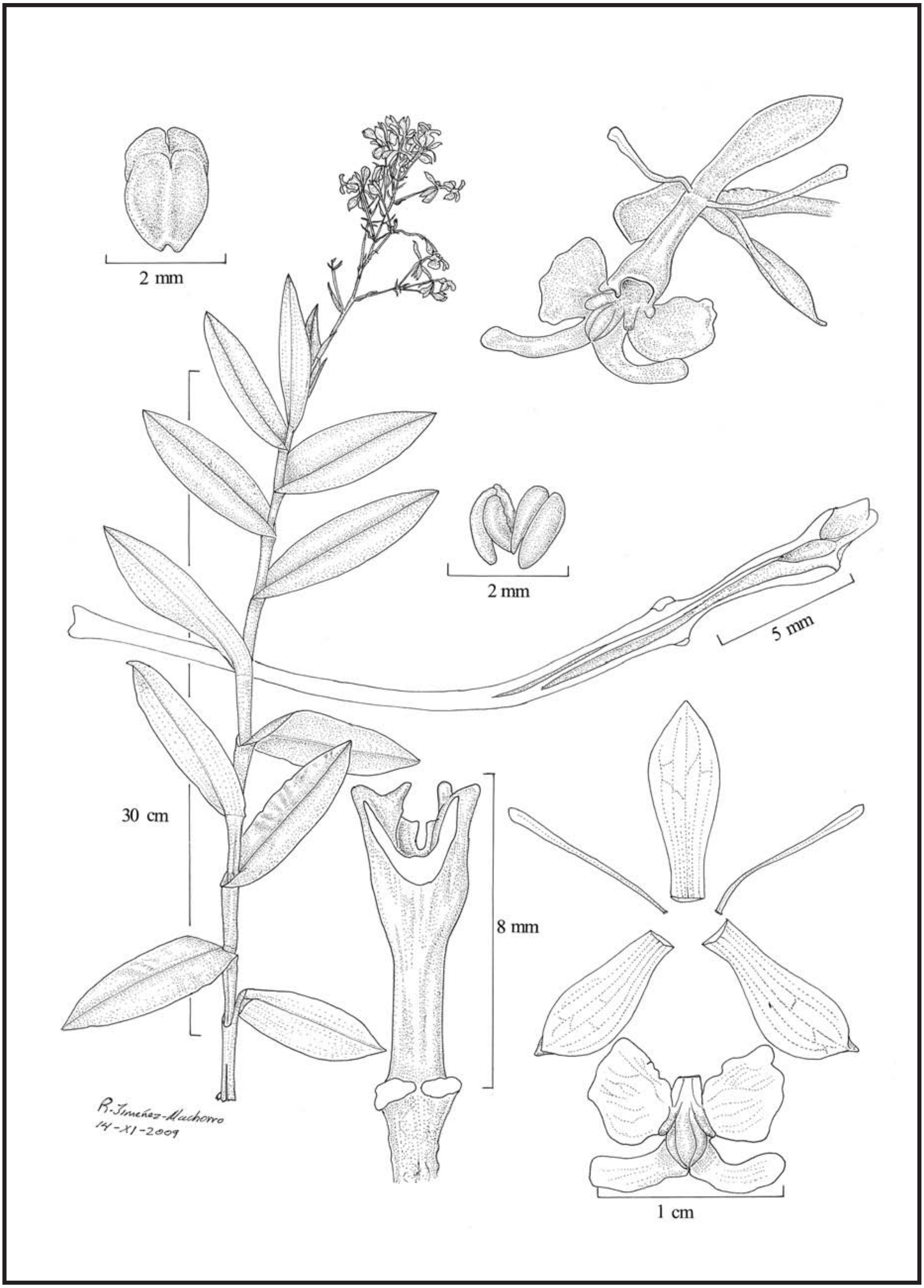
NOTE: This is the species illustrated by Hooker in Bot. Mag. 5731 and which has since then been confused with *Epidendrum paniculatum* Ruiz & Pavón, a species with green and white flowers and purple spots on the lip from northern Peru and southern Ecuador. The plant illustrated by Hooker was cultivated by Veitch, with no origin given. It was compared by various authors to *Epidendrum (Oerstedella) myrianthum* Lindl. due to the tall leafy stems and large panicle of lilac flowers, and a similar lip.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *amplus*, ample, abundant, large, great, in reference to the widely spreading, many flowered inflorescence.

REFERENCES: Bennett, Jr., D.E., and E.A. Christenson, 1998. ***Icon. Orchid. Peruv.*** 5: pl 447.

Author: E. Hágsater **Illustrator: M. López R.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM ARNOLDI Schltr. **Plate 1304**

EPIDENDRUM ARNOLDI Schltr., Repert. Sp. Nov. Regni Veg., Beih. 27: 134, 1924.
Type: COLOMBIA: Cundinamarca: Zipaquirá und Pacho, 2000 m, October 1921, ***Arnold Schultze 7.***
Holotype: B, destroyed. Neotype (here designated): Cundinamarca: entre Zipaquirá y Pacho, 2000 m,
Helmuth Schmidt-Mumm 173, COL!

Hierba epífita o terrestre, simpodial, cespitosa, erecta, ca. 150 cm de alto. **Raíces** basales. **Tallos** sencillos, tipo caña, teretes, delgados, 130 x 0.4-1 cm. **Hojas** 11-13, distribuidas en la mitad superior del tallo, alternas, articuladas, erecto extendidas; vainas tubulares, finamente estriadas, 1.6-3.5 x 0.4-1 cm; lámina oblongo lanceolada a oblongo elíptica, subaguda, subcoriáceas, margen entero, 8-10 x 1.6-2.7 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, paniculada, erecta, pluriflora, densa, 15-20 x 10-12 cm; pedúnculo terete, delgado, recto, 6-7 cm de largo; provisto de 2 o 3 brácteas tubulares, agudas, 2.5-3 cm de largo. **Brácteas florales** más cortas que el ovario, triangulares, acuminadas, 4-7mm de largo. **Ovario** terete, delgado, no inflado, no ornamentado, [7] 20-23 mm de largo. **Flores** simultáneas, resupinadas, de color lila-rosado, el disco y callos rosados a blancos; sin datos de fragancia. **Sépalos** extendidos, libres, carnosos, no ornamentados, obovado oblanceolados, obtusos, 3-5 nervados, margen entero, 8-10 x 3-3.5 mm; los **laterales** oblicuos, diminutamente apiculados. **Pétalos** extendidos, libres, lineares, oblicuos, el ápice redondeado*, 1-nervados, margen entero, 8-10 x 0.5 mm. **Labelo** unido a la columna, 3-lobado, profundamente cordado en la base, convexo en posición natural, 7-8.5 x 9-10.5 mm; bicalloso, los callos prominentes, alargados hasta la base del lóbulo medio, carnosos, delgados, divergentes; disco con 3 carinas intercallosas, paralelas, alargadas hasta el seno apical; lóbulos laterales dolabriformes a trapezoides, oblicuos, ápice truncado, margen irregular, 4.3 x 5 mm; el lóbulo medio tan ancho como los lóbulos laterales, con un istmo angosto en la base, el lóbulo medio bilobado, formado por un par de lobos falcado-oblongos, obtusos, divergentes, margen entero, 5 x 2 mm. **Columna** delgada, recta, el ápice bidentado, 6-8 mm de largo. **Clinandrio** reducido, margen entero. **Antera** ovoide, 4-locular. **Polinios** 4, tipo ala de pájaro, lateralmente aplanados. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** poco profundo, penetrando ¼ apical del ovario. **Cápsula** no vista.

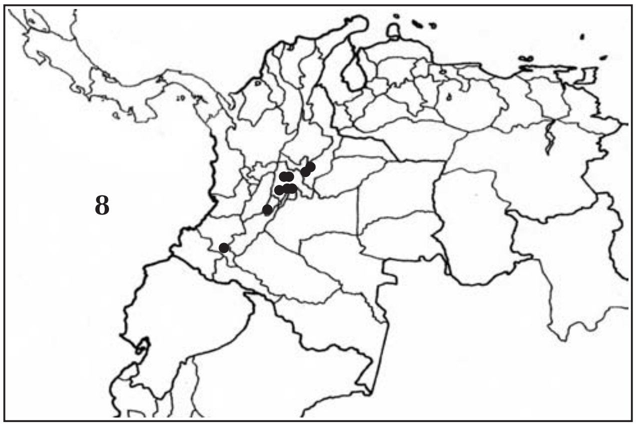
Epiphytic or terrestrial, sympodial, caespitose, erect, tall **herb**. **Roots** basal. **Stems** simple, cane-like, terete. **Leaves** 11-13, distributed along the upper half of the stem, alternate, articulate, erect-spreading; sheaths tubular, minutely striated; blade oblong-lanceolate to oblong-elliptic, sub-acute, sub-coriaceous, margin entire. **Spathaceous bract** lacking. **Inflorescence** apical, paniculate, erect, densely many-flowered; peduncle short, thin, straight. **Floral bracts** shorter than the ovary, triangular, acuminate. **Ovary** terete, thin, not inflated, unornamented, long. **Flowers** simultaneous, resupinate, lilac-pink, the disc and calli pink to white. **Sepals** spreading, free, fleshy, unornamented, obovate-oblanceolate, obtuse, 3-5-veined, margin entire; the lateral sepals oblique, minutely apiculate. **Petals** spreading, free, linear, oblique, the apex rounded, 1-veined, margin entire. **Lip** united to the column, 3-lobed, base deeply cordate, convex in natural position; bicallose, the calli prominent, elongate to the base of the mid-lobe, fleshy, thin, divergent; the disc with 3 parallel keels, the mid-keel reaching the apical sinus; lateral lobes dolabriform to trapezoid, oblique, apex truncate, margin irregular; as wide between the lobes of the mid-lobe as between the lateral lobes, isthmus narrow at the base, the mid-lobe itself bilobed, the lobes falcate-oblong, obtuse, divergent, margin entire. **Column** thin, straight, the apex bidentate. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, 4-celled. **Rostellum** sub-apical, slit. **Nectary** shallow, penetrating ¼ of the ovary.

OTHER SPECIMENS: COLOMBIA: Cauca: Santiago, Cordillère von Pasto, 2000 m, 20 II 1880, *Lehmann 519*, W-R! (Illustration, AMO!) **Boyacá:** N of Villa de Leyva, *Melampy 656*, MO! (Illustration voucher). Cerca de Arcabuco, 2750 m, 25 II 1940, *Pérez 8174*, COL! US! **Cundinamarca:** Quetame, *Dawe 364*, K-L x2! Albán, 6000 ft, 28 III 1935, *Lawrance 833*, AMES! Cabrera, vereda Nuñez, 2300-2400 m, 13 VII 1988, *Linares 2345*, COL! NY! near Pacho, 6000 ft, *Meir 243*, K-L! Fusagasugá, 1800 m, XII 1939, *Renz 3140*, RENZ! near Bogotá, 21 X 1915, *Tracey 75*, K-L! **Tolima:** Río Cabrera, 1800-2200 m, 1883, *Lehmann 2425*, G!

OTHER RECORDS: Boyacá: Villa de Leyva, 2900 m, XI 2006, *Farfán s.n.*, digital imagen, AMO! **Distrito Capital:** Bogotá, *Uribe s.n.*, digital image published in Gallery of Colombian Orchids; CD, Bogotá, 2007.

DISTRIBUTION AND ECOLOGY: Known only from around Bogotá, and a single specimen from Tolima as well as another from near Pasto, Cauca in southern Colombia; epiphytic, growing at 1800-2900 m altitude. Flowering in March, and from July to December.

RECOGNITION: *Epidendrum arnoldi* Schltr. belongs to the Pseudepidendrum Group which is characterized by the caespitose habit, unbranched stems, apical, branched inflorescence, no true spathaceous bract, and the flowers with a long, thin column, a 3-lobed lip with the mid-lobe generally bifid and divaricate, and filiform petals, and *Porphyreum* Subgroup which has variously colored flowers, not green with the apex of the column and lip white. The species is recognized by the small, purple-pink flowers, the disc and calli pink to white, sepals 8-10 mm long, the lip convex in natural position. *Epidendrum laeve* Lindl. is very similar, but the basal lobes of the lip are dolabriform-falcate, and the apical-lobe slightly arching upwards, not convex in natural position. *Epidendrum peraltum* Schltr. has somewhat larger flowers (sepals 14-16 mm long) colored greenish yellow to a dirty pink, the lip spreading in natural position, with the lateral lobes strongly retrorse, and the mid-lobe forming a pair of divaricate, linear lobes. *Epidendrum porphyreum* Lindley has fleshy purple flowers with the disc white, sepals 13-15 mm long, the lateral lobes of the lip ovate-dolabriform, not retrorse, and the mid-lobe is formed by a pair of triangular lobes.



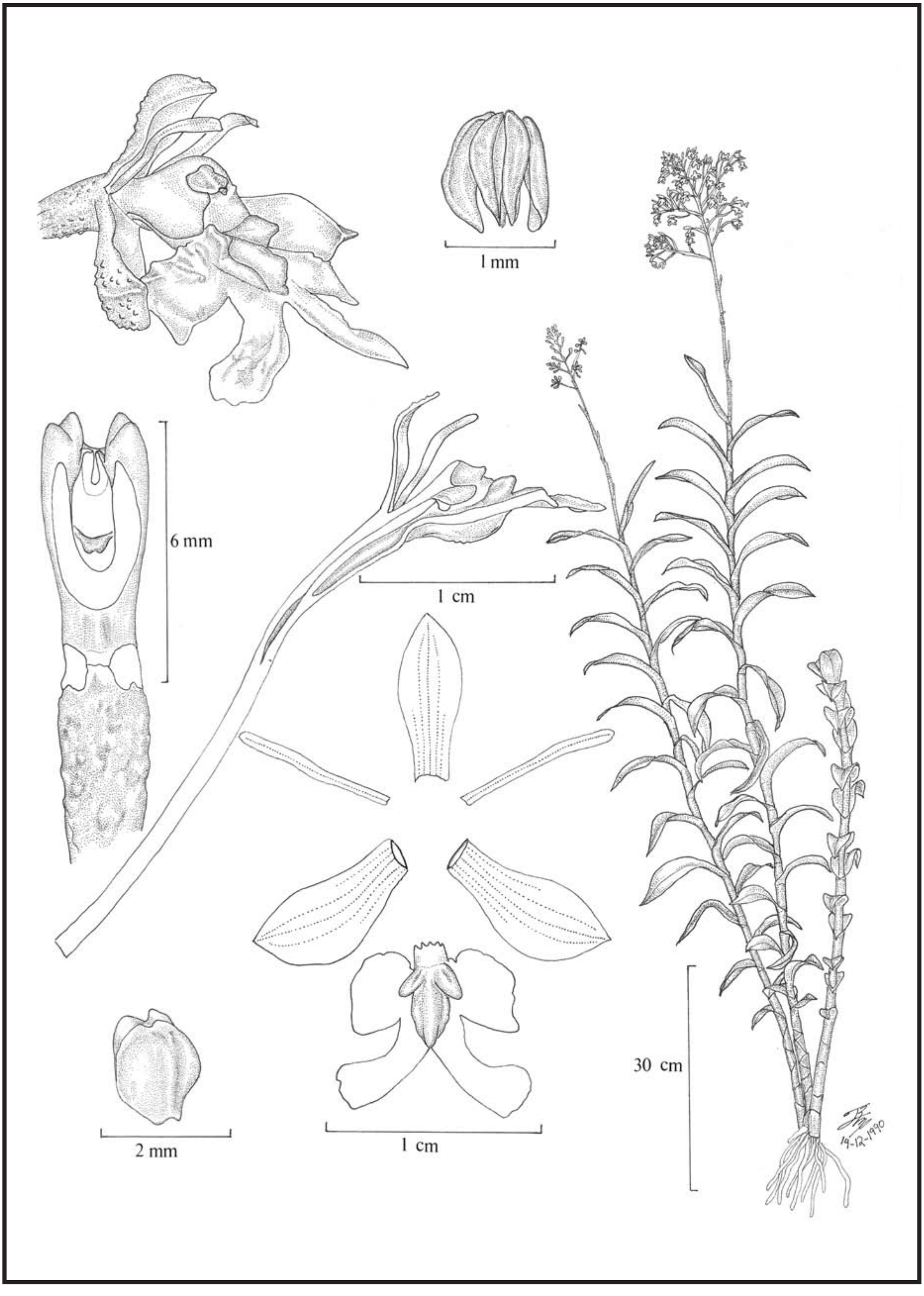
CONSERVATION STATUS: DD. Data deficient.

***NOTE:** The original description indicates the apex of the petals as "oblique sub-bilobulato-retusis".

ETYMOLOGY: In honor of Arnold Schultze, who collected orchids around Bogotá in the second half of the 19th Century.

REFERENCE: Ortiz V., Pedro & Carlos Uribe V., 2007, Galería de Orquídeas de Colombia, CD, Da Vinci Editores, Bogotá, Colombia.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM ATACAZOICUM Schltr. **Plate 1305**

EPIDENDRUM ATACAZOICUM Schltr., Repert. Sp. Nov. Regni Veg. Beih. 8: 67, 1921.

Type: ECUADOR: Pichincha: Mt. Atacazo, April 1900, ***A. Sodiro s.n.*** Holotype: B, destroyed. Lectotype (designated by Dodson, in P. Jørgensen & C. Leon 1999): QPLS! xerox, AMO! Sketch of lip, AMO!

Synonym: *Epidendrum bifalce* Schltr., Repert. Sp. Nov. Regni Veg. Beih. 8: 67,1921. Type: ECUADOR: Chimborazo: Mt. Chimborazo, ad vicum Chillanes, ***A. Sodiro 63.*** Holotype: B, destroyed. Lectotype (designated by Dodson, in P. Jørgensen & C.Leon 1999): QPLS! xerox, AMO! Isolectotypes: QPLS x3!

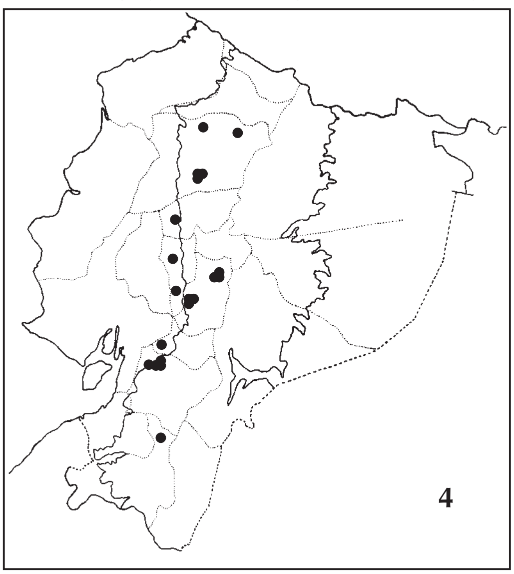
Hierba litófita o epífita, simpodial, cespitosa, erecta, de 70-200 cm de alto. **Raíces** basales, carnosas, blancas, 2-3 mm de grosor. **Tallos** sencillos, teretes en la base a lateralmente aplanados hacia el ápice, ca. 50-170 x 0.6-1.2 cm; cubiertos en la base por vainas tubulares no foliosas, escariosas y fibrosas con el tiempo, 3-4 cm de largo. **Hojas** hasta 25, distribuidas a lo largo del tallo, articuladas, erecto extendidas, subcoriáceas; vaina tubular, finamente estriada, 2-5 x 0.6-1.3 cm; lámina elíptica a oblongo elíptica, aguda, margen entero, lisa, 7-18 x 2.5-5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, paniculada, florece una sola vez, erecta, piramidal, 15-30 cm de largo; produciendo de 14-20 racimos (algunos a su vez ramificados) desiguales en tamaño (gradualmente más cortos hacia el ápice), con las flores densamente agregadas a partir de la mitad apical del raquis, 2.5-9 cm de largo cada racimo provisto en la base de una bráctea prominente, angostamente triangular, largamente acuminada, 0.7-6 cm de largo; pedúnculo algo lateralmente aplanado, 6-16 cm de largo; con 1-4 brácteas tubulares (que lo cubren casi totalmente), acuminadas, parcialmente imbricadas, 5-10 cm de largo. **Brácteas florales** pequeñas, mucho más cortas que el ovario, triangular lanceoladas, acuminadas, abrazadoras, 3-7 mm de largo. **Ovario** terete, delgado, con verrugas poco prominentes, 20-35 mm de largo. **Flores** 60-200, simultáneas, resupinadas, de color rosa-lila, el labelo más claro, antera, callos y disco blancos, fragancia ausente. **Sépalos** entreabiertos, libres, carnosos, espatulados oblanceolados, agudos, 5-nervados, las nervaduras laterales cortas, dorsalmente verrugosos, margen extendido, entero, 7.5-8.5 x 3-4 mm. **Pétalos** entreabiertos, libres, lineares, redondeados en el ápice, 1-nervados, margen entero, extendido, 7-8 x 0.6-0.7 mm. **Labelo** unido a la columna, 3-lobado, ligeramente cordado en la base, margen entero, 6-8 x 8.5-9 mm (entre lóbulos apicales, 7-8 mm entre los laterales); bicalloso, los callos corniformes, delgados, algo lateralmente aplanados, ligeramente divergentes, alargados hasta la base del lóbulo medio, disco con tres quillas intercallosas prominentes, romas, alargadas hasta el seno apical; lóbulos laterales oblicuamente ovado dolabriformes, el margen anterior formando un ángulo obtuso, 2.5-3 x 3-4 mm; lóbulo medio profundamente emarginado, bilobado, los lobos delgados, falcados, oblongos, divaricados, redondeados en el ápice, 3-4 x 9-9.5 mm. **Columna** recta, delgada, terminada en un par de dientes apicales pequeños, 5-6 mm de largo. **Clinandrio** reducido, margen entero. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** cortos, de 1/3 del largo de la cavidad estigmática. **Antera** ovoidea, 4 locular, con una quilla baja en la superficie dorsal. **Polinios** 4, tipo ala de pájaro, lateralmente fuertemente comprimidos, los interiores algo menores, translúcidos; caudículas suaves y lisas, ligeramente más cortas que los polinios; viscidio semilíquido, transparente. **Nectario** penetrando 1/5 del ovario, no ornamentado. **Cápsula** elipsoide; pedicelo 19 mm de largo; cuerpo 33 x 23 mm; cuello apical obsoleto.

Lithophytic or epiphytic, sympodial, caespitose, erect, tall **herb**. **Roots** basal, fleshy, white, thick. **Stems** simple, terete at the base, laterally compressed towards the apex; the base covered by tubular, non-foliar, scariose sheaths, becoming fibrous with time. **Leaves** up to 25, distributed throughout the stem, articulate, erect-spreading, sub-coriaceous; sheath tubular, minutely striated; blade elliptic to oblong-elliptic, acute, margin entire, smooth. **Inflorescence** apical, paniculate, flowering only once, erect, pyramidal; producing 14-20 unequal branches, sometimes themselves branched, progressively shorter, the flowers densely aggregate from the middle of the rachis on; each provided with a prominent bract at the base, narrowly triangular, long-acuminate; peduncle somewhat laterally compressed, with 1-4 tubular, acuminate, partly imbricating bracts. **Floral bracts** small, much shorter than the ovary, triangular-lanceolate, acuminate, amplexicaul. **Ovary** terete, thin, long, with small warts. **Flowers** 60-200, simultaneous, resupinate, rose-lilac, the lip lighter colored, anther, calli and disc white, without fragrance. **Sepals** partly spreading, free, fleshy, spatulate-oblanceolate, acute, 5-veined, the lateral veins short, dorsally verrucose, margin spreading, entire. **Petals** partly spreading, free, linear, apex rounded, 1-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base slightly cordate, margin entire; bicallose, the calli horn-like, thin, somewhat laterally flattened, slightly divergent, elongate, reaching the base of the mid-lobe, disc with 3 prominent, rounded keels, reaching the apical sinus; lateral lobes obliquely ovate-dolabriform, the apical margin forming an obtuse angle; mid-lobe deeply emarginate, bilobed, the lobes narrow, falcate, oblong, divaricate, apex rounded. **Column** straight, thin, ending in a pair of small apical teeth. **Clinandrium-hood** reduced, margin entire. **Rostellum** apical, slit. **Anther** ovoid, 4-celled, with a low, dorsal keel. **Pollinia**, 4, "bird-wing" type, strongly laterally compressed, the inner pair somewhat smaller, translucent; caudicles soft and smooth, slightly shorter than the pollinia; viscidium semi-liquid, transparent. **Nectary** penetrating 1/5[th] of the ovary, smooth. **Capsule** ellipsoid, with a long pedicel and short apical neck.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Endemic to Ecuador, widespread on the western slopes of the Andes, from the valley of Lloa and at the base of Mount Atacazo and Mount Pichincha, south to Loja province. Growing usually on rocky banks at 2000-3200 m altitude, flowering mainly from May to November.

RECOGNITION: *Epidendrum atacazoicum* belongs to the Pseudoepidendrum Group and Porphyreum Subgroup which is recognized by the caespitose habit, unbranched stems, apical, branched inflorescence, no spathe, and the flowers with a 3-lobed lip with the mid-lobe generally bifurcate and divaricate, and filiform petals. The species is recognized by the pyramid-shaped inflorescence with small, rose-lilac flowers, the lip lighter colored, (sepals 7.5-8.5 mm long), sepals and the ovary with small warts, mid-lobe of the lip forming a pair of linear-oblong lobes, the apices rounded. *Epidendrum porphyreum* Lindl. has a non-pyramid-like, paniculate inflorescence, with larger, magenta flowers (sepals 13-15 mm long), the disc white, the mid-lobe of the lip forms a pair of triangular, slightly divaricate, the apices obtuse. *Epidendrum amplum* D.E.Benn. & Christenson has the inflorescence with the branches arranged in the same plane, sepals and ovary smooth, and the lip differently proportioned with the lateral lobes sub-rectangular, narrower than the mid-lobe. *Epidendrum peraltum* Schltr. has greenish yellow flowers tinged with pink to totally dirty pink, sepals 14-16 mm long, dorsally smooth, and the lateral lobes of the lip falcate-oblong, strongly reflexed, the bilobed mid-lobe with a pair of strongly divaricate, linear lobes.



COMMON NAME: Flor de Cristo.

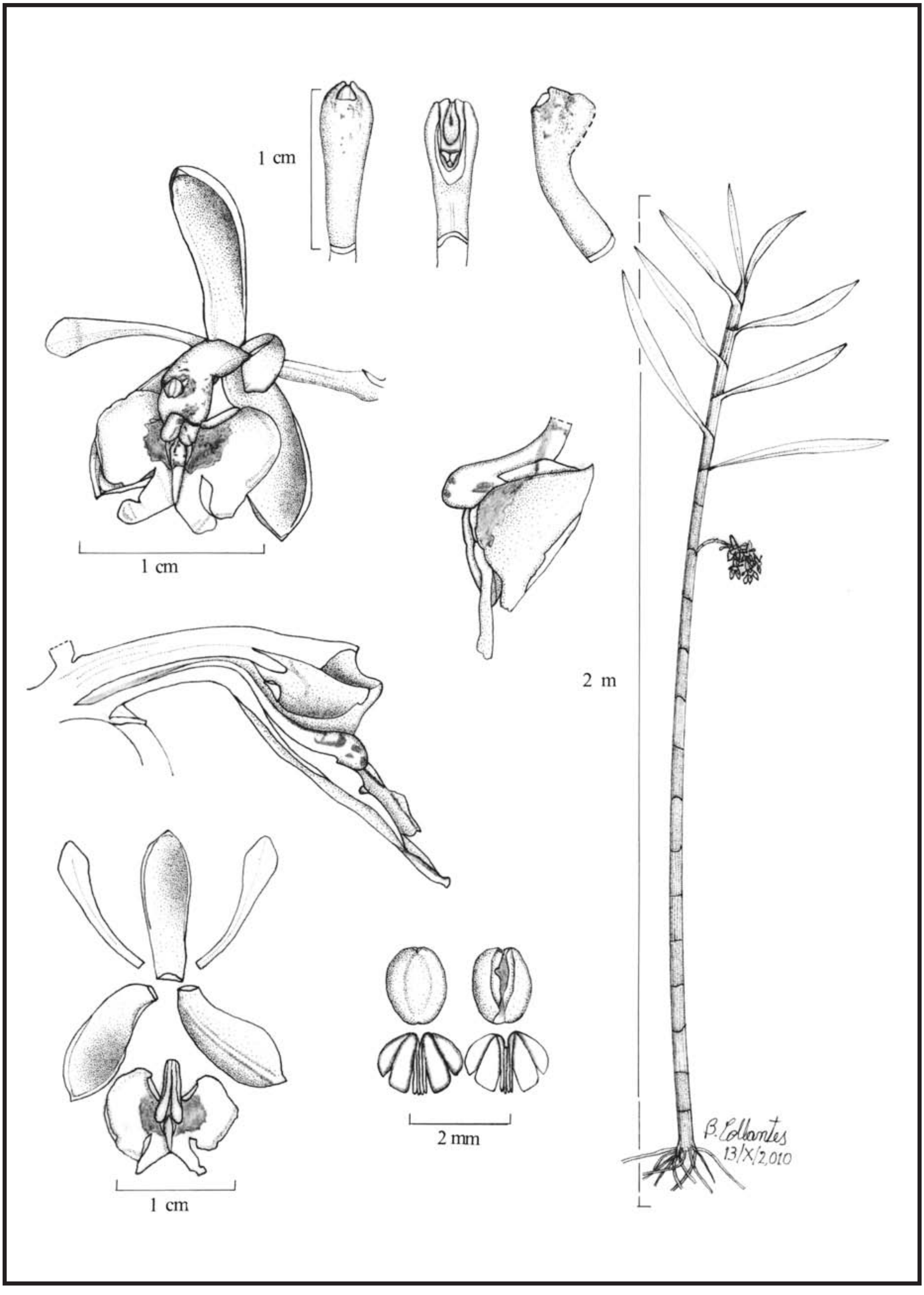
CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to Mount Atacazo, near Quito, where the type was collected.

NOTE: The illustration published by Mansfeld (1929) shows a lip of different proportions, with the callus displaced towards the isthmus of the lip and the lateral lobes projected backwards. We do not know if this is an artifice of the artist or a distortion of the flower. On the other hand the original description indicates sepals as ca. 11 mm long and column 9 mm long, whereas the material we have seen has sepals 7.5-8.5 mm long and the column 5-6 mm long.

REFERENCE: Dodson, C. H., 1999, Orchidaceae in P.M. Jørgensen & S. Léon-Yañez, (eds.) Catalogue of Vascular Plants of Ecuador, **Monog. Syst. Bot. Missouri Bot. Gard.** 75: 630-775. Mansfeld, R., 1929. Figuren Atlas zu den Orchideenfloren der Südamerikanischen Kordillerenstaaten von R. Schlechter. **Repert. Sp. Nov. Regni Veg. Beih.** 57: t. 86 Nr. 334.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM BAMBUSITRICOLOR Hágsater & Collantes **Plate 1306**

EPIDENDRUM BAMBUSITRICOLOR Hágsater *et* Collantes, *sp. nov.*

Type: PERU: Huancavelica: Prov. Tayacaja; Distr. Huachocolpa: Chihuana, cloud forest, 2500-2600 m, January 2008 ***Benjamín Collantes M. & Teodorico Espinal 63***. Holotype: USM! (herbarium specimen and flowers in spirit; Illustration voucher). Digital image of live inflorescence, AMO!

Epidendro bambusiformi Kraenzl. simile sed sepalis petalisque viridibus, columnae dimidio apicali labelloque albis et cum purpureo ornatis, labelli lobulo medio profunde furcato lobos oblongos faciente recedit.

Hierba terrestre, simpodial, cespitosa, erecta, hasta 3.5 m de alto. **Raíces** basales, gruesas. **Tallos** sencillos, tipo caña, erectos, rectos, 1.6 cm de grosor. **Hojas** numerosas, distribuidas a todo lo largo del tallo, articuladas, dísticas, subcoriáceas; vaina tubular, 4-6 x 1.6 cm, lámina angostamente lanceolada, acuminada, margen entero, 32.5-40 x 3-3.7 cm. **Inflorescencias** laterales producidas de la base de la vaina de la hoja, a lo largo del tallo maduro, opuesta a la lámina foliar, racemosa, erecto arqueada, de 9.5-17 cm de largo; pedúnculo ca. 6-7.5 cm de largo, cubierto casi en su totalidad por 4-5 vainas tubulares, agudas, de 1.6-2.5 cm de largo. **Brácteas florales** más cortas que el ovario, linear-triangulares, acuminadas, abrazadoras, 3-10 mm de largo. **Flores** 20-25 por racimo, abriendo en sucesión pero llegando a estar todas abiertas en un momento dado, resupinadas, sépalos, pétalos y base de la columna verdes, ápice de la columna y labelo blancos, el ápice de la columna, callos y disco decorados de color púrpura, la mancha de disco del labelo mas oscura y casi sólida; sin fragancia. **Ovario** delgado, no inflado, liso, 17-25 mm de largo. **Sépalos** libres, extendidos, carnosos, oblanceolados, subobtusos, cóncavos, con una quilla dorsal baja, margen entero, extendido, 12.5-13 x 4.0-4.5 mm; los **laterales** diminutamente apiculados. **Pétalos** libres, extendidos, lineares hacia la base, después oblanceolados, ápice obtuso-redondeado, 1-nervados, margen entero, extendido, 13 x 2.9 mm. **Labelo** unido a la columna, trilobado, base cordada, margen entero, extendido, 7-12 x 9 mm; bicalloso, los callos prominentes, anchamente claviformes, algo lateralmente aplanados, paralelos; disco engrosado, con quillas paralelas, el par lateral corto e incipiente, la central prominente, alargada hasta el seno apical; lóbulos laterales dolabriformes, extendidos, ca. 3.5 x 5 mm; lóbulo medio bifurcado, formando un par de lobos ligeramente divaricados, oblongos, ápice redondeado, 2.5 x 4.5 mm. **Columna** ligeramente arqueada en la mitad basal, delgada y dilatada hacia el ápice, 8 mm de largo. **Rostelo** apical, hendido. **Clinandrio** reducido, margen entero. **Antera** elipsoide, con una quilla al frente, 4-locular, 1.8 x 1.2 mm. **Polinios** 4, en dos pares, desiguales, el externo más pequeño, curvo, semiovoides, convexo-planos; caudículas filiformes, de 1.5 mm de largo. **Nectario** penetrando hasta la base del sépalo dorsal, angosto, liso.

Terrestrial, sympodial, caespitose, tall, erect **herb. Roots** basal, thick. **Stems** simple, cane-like, erect, straight, thick. **Leaves** numerous, distributed throughout the stem, articulate, distichous, sub-coriaceous; sheaths tubular, blade narrowly lanceolate, acuminate, margin entire. **Inflorescences** lateral, produced from the base of the leaf-sheath, from the mature stem, opposite the leaf, racemose, erect-arching, long; peduncle nearly totally covered by 4-5 tubular, acute bracts. **Floral bracts** shorter than the ovary, linear-triangular, acuminate, amplexicaul. **Flowers** 20-25 per raceme, opening in succession but all open at one stage, resupinate, sepals and petals and the base of the column green, apex of the column and lip white, apex of the column, calli and disc of the lip purple, the splotch on the disc darker and nearly solid; without fragrance. **Ovary** thin, not inflated, smooth, long. **Sepals** free, spreading, fleshy, oblanceolate, sub-obtuse, concave, with a dorsal low keel, margin entire, spreading, lateral sepals minutely apiculate. **Petals** free, spreading, linear near the base, then oblanceolate, apex obtuse-rounded, 1-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base cordate, margin entire, spreading; bicallose, the calli prominent, widely club-shaped, somewhat laterally compressed, parallel; disc thickened with parallel keels, the lateral pair short and low, the mid-keel prominent, elongate to the apical sinus; lateral lobes dolabriform, spreading; mid-lobe bifurcate, forming a pair of slightly divaricate, oblong lobes, apex rounded. **Column** slightly arching along the basal half, thin, dilated towards the apex. **Rostellum** apical, slit. **Clinandrium-hood** reduced, margin entire. **Anther** ellipsoid, with a keel in front, 4-celled. **Pollinia** 4, in two pairs, unequal, the outer one smaller, curved, semi-ovoid, convex-flat; caudicles filiform. **Nectary** penetrating as far as the base of the dorsal sepals, narrow, smooth.

OTHER SPECIMENS: PERU: Junín: Chanchamayo, Chilpez, ca. 26 km S of San Ramón, 1650-1700 m, 19 X 1982, *Smith 2657*, MO! NY! USM! (Illustration, AMO!) **Pasco:** Oxapampa, Abra Villa Rica, 2000 m, 26 VIII 2005, *Rojas 3862*, MO!

OTHER RECORDS: PERU: Huancavelica: Tayacaja; Huachocolpa: Chihuana, cloud forest, 2500-2600 m, I 2008 *Collantes & T. Espinal 63*; plant cultivated in "Jardín Turístico de Orquídeas de Chihuana" by Teodorico Espinal.



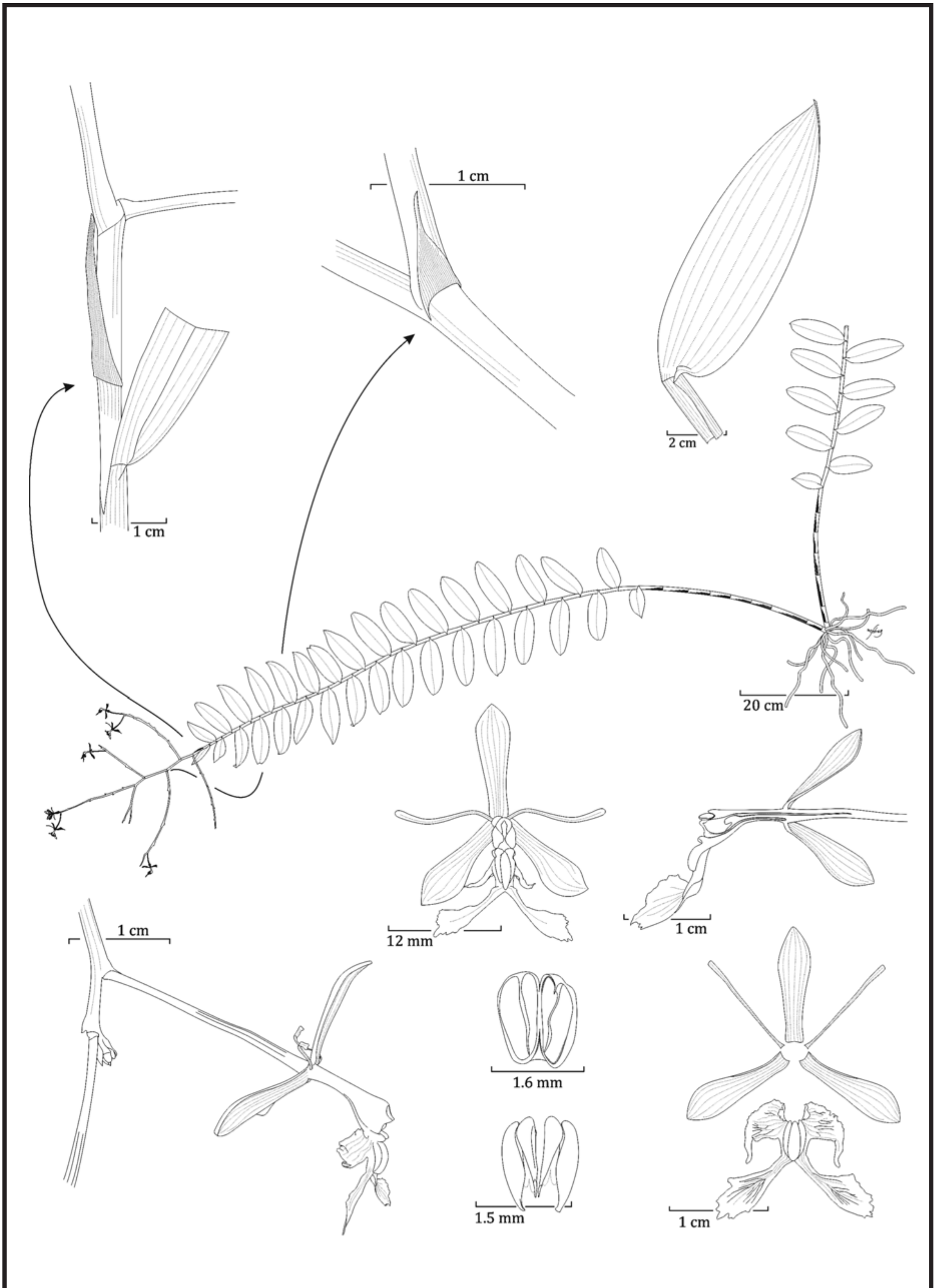
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DISTRIBUTION AND ECOLOGY: Known only from central Peru, on the upper basin of the Apurimac River, at 1700-2600 m altitude, terrestrial in cloud forest. Flowering August, October, January and February.

RECOGNITION: *Epidendrum bambusitricolor* belongs to the Bambusiforme Group which is characterized by the caespitose habit, tall, bamboo-like canes with numerous long, acuminate leaves, and the numerous lateral, racemose inflorescences. The species is recognized by the leafy, bamboo-like stems, the lateral inflorescences with showy, deep green and white flowers marked with purple, the lip 3-lobed, with the mid-lobe bifurcate into a pair of divergent, oblong lobes. It is vegetatively reminiscent of *E. bambusiforme* at first glance, but that species has greenish brown sepals and petals with the column and lip white, often spotted with light brown dots, the mid-lobe of the lip is triangular and does not form narrow oblong lobes. The flowers at first sight recall the coloring and shape of *Epidendrum atroscriptum* Hágsater of the Paniculatum Subgroup, but that subgroup has filiform petals, and the lateral inflorescence is only present in *Epidendrum pseudopaniculatum* Dodson.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to the superficial similarity of the species to *Epidendrum bambusiforme*, and the 3-colored flowers, green, white and purple which easily distinguish this species.



EPIDENDRUM BISPATHULATUM Hágsater, O.Pérez & E.Santiago

Plate 1307

EPIDENDRUM BISPATHULATUM Hágsater, O.Pérez *et* E.Santiago,*sp. nov.*

Type: COLOMBIA: Valle del Cauca: Municipio de Yotoco, Reserva Natural de Yotoco: Interior del relicto superior, 1600 m, aprox. 20°C, 11 abril 2010, ***Oscar Alejandro Pérez, Edicson Parra & Valentín Hidalgo 513.*** Holotype: VALLE! (Illustration voucher).

Epidendro cirrhochilo Lehm. & Kraenzl. simile sed foliis ellipticis latioribus, floribus majoribus eburno-luteis immaculatis, lobulis labelli lobulo medio lineari-spathulatis non cirrhatis differens.

Hierba epífita, simpodial, cespitosa, de 100-159 cm de alto. **Raíces** basales, gruesas, 1.5-3 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base y muy ligeramente aplanados hacia la parte media y distal, erectos cuando jóvenes y arqueados o descendentes al madurar, 77-131 x 0.47-1 cm; vainas foliares ausentes en la base. **Hojas** 18-33, distribuidas a lo largo del tallo, articuladas, alternas, desiguales en tamaño (las basales y las apicales más cortas); vainas tubulares finamente estriadas, 1.3-4.2 x 0.47-1 cm; lámina elíptica, aguda, margen entero, papirácea, con la nervadura central prominente, impresa, acompañada por tres pares de nervaduras secundarias poco evidentes, 4-14 x 0.98-3.75 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, paniculada, multiflora, de 20-28.3 cm de largo, pedúnculo subterete, corto, de 2.8-ca. 4.5 cm de largo; provisto en la parte media de una bráctea, triangular, aguda, abrazadora; raquis ligeramente flexuoso, de 16-26.1 cm de largo, con racimos extendidos de 10-21.8 cm de largo, congestos, cada uno con una bráctea basal abrazadora triangular, acuminada, de 0.5-2.4 cm de largo. **Brácteas florales** inconspicuas, deltadas, abrazadoras, 1-5 mm de largo. **Ovario** terete, delgado, no inflado, no ornamentado, 1.2-1.3 [2.1] cm de largo. **Flores** numerosas, resupinadas, los botones florales verdes, la flor totalmente desarrollada con sépalos amarillo-crema en la parte media-proximal, verdosos en la parte distal, pétalos ligeramente verdosos en la parte proximal, amarillos-crema en la parte media y distal, columna ligeramente verdosa en la parte media-proximal, color amarilla crema en la parte distal, labelo y callo color amarillo crema, lóbulo medio del labelo ligeramente verde pálido en el ápice; levemente fragantes de día, la fragancia agradable. **Sépalos** extendidos a ligeramente reflexos, libres, linear espatulados, subagudos, ligeramente cóncavos, 5-nervados, margen entero, ca. 11-14 x 3-4 mm. **Pétalos** ligeramente reflexos, libres, filiformes, ápice redondeado, 1-nervados, ápice redondeado, margen entero, ca. 12-13 x 0.5 mm. **Labelo** soldado a la columna, 3-lobado, truncado en la base, ca. 10-12 x 12-16 mm; bicalloso, los callos prominentes, cortos; disco con tres quillas carnosas, delgadas, agudas, paralelas, las laterales más cortas que la central; lóbulos laterales oblicuamente triangulares, ápice acuminado, ligeramente cirroso, margen exterior crenulado, 3.3-5 x ca. 3.4-5 mm, lóbulo medio profundamente bilobulado, los lóbulos ligeramente divaricados, 8-9 x 12-16 mm, cada lóbulo linear espatulado, ápice oblicuamente truncado con el margen eroso, 8-9 x 3-3.5 mm. **Columna** recta, delgada en la parte proximal a gradualmente más amplia en la parte distal, con un par de dientes obtusos en el ápice, ca. 1 cm de largo. **Clinandrio** corto, margen entero. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** no vistos. **Polinios** 4, tipo "ala de pájaro", fuertemente comprimidos lateralmente, los interiores más cortos, de 1.5 mm de largo; caudículas laminares, más cortas que los polinios. **Antera** ovoide, 4-locular, ca. 1.6 x 1.3 mm. **Nectario** poco profundo, sin penetrar el ovario, no inflado, no ornamentado. **Capsula** no vista.

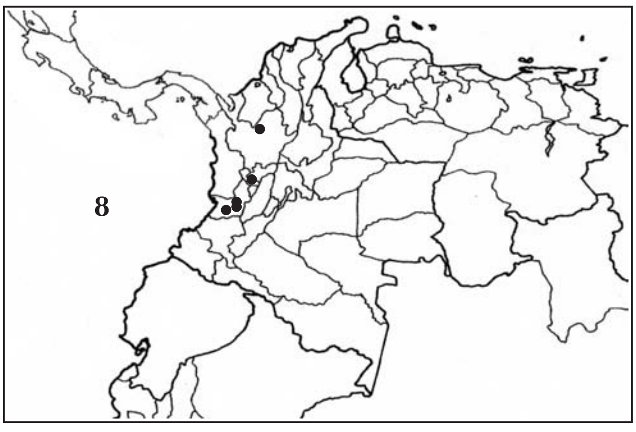
Epiphytic, sympodial, caespitose, tall, **herb**. **Roots** basal, thick. **Stems** simple, cane-like, terete at the base, slightly laterally compressed towards the middle and above, erect when young, arching or pendent when mature, tall; base without foliar sheaths. **Leaves** 18-33, distributed throughout the stem, articulate, alternate, unequal in size (the basal and apical ones shorter); sheaths tubular, minutely striated; blade elliptic, acute, margin entire, membranaceous, the central vein prominent, depressed, accompanied by 3 pairs of secondary, non-evident secondary veins. **Inflorescence** apical, paniculate, many-flowered; peduncle sub-terete, short, provided in the middle with a single, triangular, acute, amplexicaul bract; rachis slightly flexuous, the branches spreading, congested, each subtended by an amplexicaul, triangular, acuminate bract. **Floral bracts** inconspicuous, deltate, amplexicaul. **Ovary** terete, thin, not inflated, unornamented. **Flowers** numerous, resupinate; the floral buds green, mature flowers with sepals creamy yellow proximally, distally greenish; petals proximally somewhat greenish, creamy yellow towards the middle and apex, basal half of the column greenish, the apical half creamy yellow, lip including the calli creamy yellow, the mid-lobe somewhat pale green towards the apex; fragance diurnal, agreeable, weak. **Sepals** spreading to slightly reflexed, free, linear-spatulate, sub-acute, slightly concave, 5-veined, margin entire. **Petals** slightly reflexed, free, filiform, 1-veined, apex rounded, margin entire. **Lip** united to the column, 3-lobed, base truncate; bicallose, the calli prominent, short; disc with 3 fleshy, narrow, acute, parallel keels, the lateral keels shorter than the mid-keel; lateral lobes obliquely triangular, apex acuminate, somewhat cirrhose, outer margin crenulate; mid-lobe deeply bilobed, the lobes slightly divaricate, each lobe linear-spatulate, apex obliquely truncate, the margin erose. **Column** short, margin entire. **Rostellum** sub-apical, slit. **Pollinia** 4, "bird-wing" type, strongly laterally compressed, the inner pair shorter; caudicles laminar, shorter than the pollinia. **Anther** ovoid, 4-celled. **Nectary** shallow, without penetrating the ovary, not inflated, smooth.

OTHER SPECIMENS: COLOMBIA: Caldas: Guásira [Guática] to Anserma Vieja, 2000 m, 26 X 1883, *Lehmann 3274*, G! **Valle del Cauca:** Reserva Forestal de Yotoco, 1600 m, 15 I 1980, *Guarin 49*, COL! VALLE! Farallones de Cali, 1600-2200 m, *Lehman 8316*, AMES x2! K-L! Reserva Natural de Yotoco, relicto superior, ca. 20°C, ca. 1600 m, 23 III 2009, *Parra 254*, VALLE!

OTHER RECORDS: COLOMBIA: Antioquia: Ituango, digital image by Dr. Carlos Uribe, published in Gallery of Colombian Orchids as *Epidendrum cirrhochilum*, CD, Bogotá, 2007.

DISTRIBUTION AND ECOLOGY: Known only from the eastern slope of Cordillera Occidental in Colombia, from the province of Valle del Cauca above Cali to Ituango, Antioquia. Relatively abundant, growing inside the forest as an epiphytic plant on various phorophyte species (both young and old trees), at 1600-2200 m altitude. Flowering from January to April.

RECOGNITION: *Epidendrum bispathulatum* belongs to the Pseudepidendrum Group which is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, usually apical inflorescence, the filiform petals and the lip usually 3-lobed (with 3-5 parallel fleshy keels), the apical lobe often bifurcate, and "bird-wing" type pollinia, and the Paniculatum Subgroup, which has green and white flowers, often marked with purple on the disc of the lip and apex of the column. The species is recognized by the very long, many leaved, tall stems, the large panicle with spreading branches, greenish yellow and white flowers, not marked with purple, and especially the bilobed mid-lobe of the lip with the lobes spatulate, widened towards the apex and obliquely truncate, the apical margin erose. *Epidendrum cirrhochilum* F. Lehm. & Kraenzl. has shorter stems, fewer, proportionately narrower, acuminate leaves, and similar flowers, but the lateral lobes and lobes of the mid-lobe long and cirrhose, the lip has a circular purple ring surrounding the disc of the lip. *Epidendrum cirrochiloides* Hágsater & E.Santiago from Panama has larger, wider leaves, white to greenish flowers, the lip with purple stripes on the disc, and the apex of the lobes of the lip acuminate, the margin entire. *Epidendrum longicrure* Schltr. has strongly reflexed sepals, flowers greenish brown, the lateral lobes of the lip dolabriform, and the mid-lobe formed by a pair of oblong lobes with the margin entire. *Epidendrum cirrhohirtzii* Hágsater & E.Santiago has smaller greenish yellow flowers (sepals 5-6 mm long), the lip pale yellow, with the apices of the lobes cirrhose.



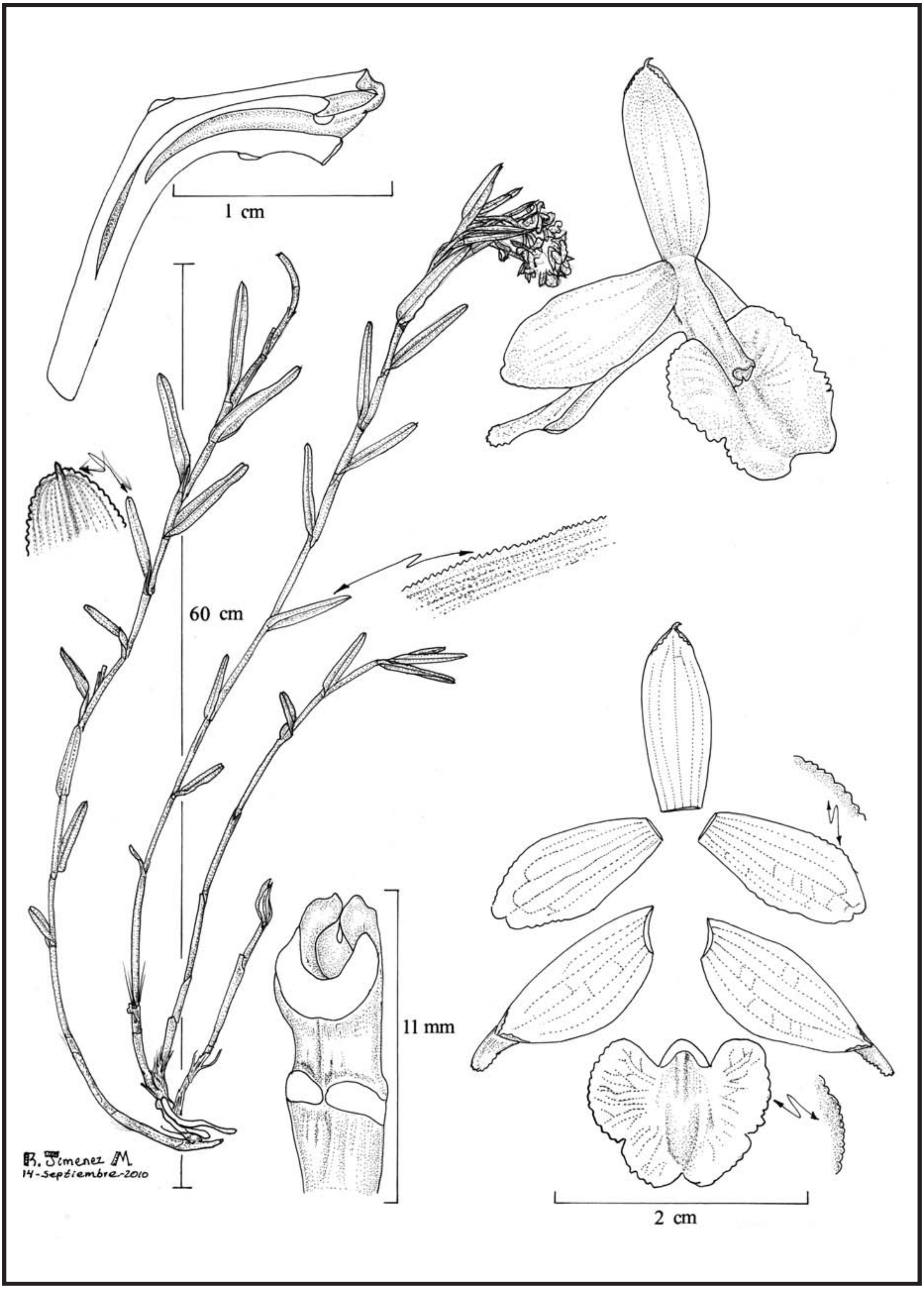
NOTE: In one of the specimens, *Guarin 49*, the lobes of the mid-lobe were noted as being sparsely pillose at about the middle on the inside. This feature, however is not present in other specimens.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *bi*, two, and *spathula*, the shape of a chemist's spatula, with the lower end very much attenuated, and widened towards the truncate apex, in reference to the peculiar lobes of the mid-lobe which are widened towards the apex and obliquely truncate.

REFERENCES: Ortiz V., P. 2007. **Gallery of Colombian Orchids** as *Epidendrum cirrhochilum*, CD, Bogotá. Universidad Nacional de Colombia, Hallan nueva especie de orquídea en la Reserva Natural Yotoco de Palmira, Valle. **eltiempo.com**, 8 agosto 2010.

Authors: E. Hágsater, O. Pérez & E. Santiago **Illustrator: O. Pérez** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM CAMILO-DIAZII Hágsater & Chocce **Plate 1308**

EPIDENDRUM CAMILO-DIAZII Hágsater *et* Chocce, *sp. nov.*

Type: PERU: Amazonas: Prov. Luya, Camporredondo, Tullanga, Cerro Huicsocunga, 3310 m, 6 septiembre 1989, ***Camilo Díaz S. y José Campos 3782***, Holotype: USM 180041! Isotypes: MO! (Illustration voucher). USM 127519!

Epidendro jalcaënse Chocce, Dalström, Hágsater & Arnaiz simile sed habitu majore, sepalis et petalis 5-nervatis, labello bilobato ad basem profunde cordato, columna breviore.

Hierba terrestre, erecta, simpodial, cespitosa, 20-90 cm de alto. **Raíces** basales, carnosas, blancas, 1.5-4 mm de grosor. **Tallo** sencillo, tipo caña, teretes, delgados, rectos, 15-85 x 0.3-0.45 cm. **Hojas** 6-11, alternas, suberectas, distribuidas desde la base hasta el ápice, articuladas; vainas tubulares, estriadas, lisas, 4.5-6 x 0.3-0.35 cm; lamina linear elíptica, coriácea, verde, ápice redondeado, mucronado aristado, margen crenado, extendido, 3-7 x 0.7-1.1 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, arqueada, densa, multiflora, 7.5 cm de largo; pedúnculo corto, terete, delgado, ligeramente arqueado, 2 cm de largo; raquis delgado, terete, arqueado. **Brácteas florales** más cortas que el ovario, triangulares, 4-5 x 1.5 mm. **Ovario** 3-sulcado, 10-15 mm de largo. **Flores** hasta 12, simultaneas, resupinadas, rojo-anaranjadas fuerte, llamativas; sin fragancia. **Sépalos** libres, carnosos, margen entero, extendido, 5-nervados; el **dorsal** extendido, elíptico oblongo, obtuso, aristado, 14.5 x 6.5 mm; los **laterales** entreabiertos, con una quilla dorsal, prominentemente aristados, 16-20 x 6.5 mm. **Pétalos** libres, rectos y extendidos transversalmente, obovados, ligeramente emarginados, 5-nervados, margen finamente eroso-crenulado, extendido, 13.0-13.5 x 6.5 mm. **Labelo** unido a la columna, bilobado, profundamente cordado en la base, extendido, 13 x 15-16 mm (parte libre); ecalloso, disco provisto con una quilla, gruesa, baja que llega hasta el seno apical del labelo; lóbulos laterales semiovados, con una muesca mas allá de la mitad, margen eroso crenulado, extendido, 13 x 6.5 mm. **Columna** delgada, recta, terminando en un par de alas cortas, redondeadas, 11-12 mm de largo. **Clinandrio** corto, margen entero. **Antera** reniforme, 4-locular. **Polinios** 4, obovoides, comprimidos. **Rostelo** apical, hendido. **Nectario** penetrando menos de 1/4 del ovario, delgado, liso.

Plant terrestrial, erect, sympodial, caespitose, to 90 cm tall. **Roots** basal, fleshy, white, thick. **Stem** simple, cane-like, terete, thin, straight. **Leaves** 6-11, alternate, sub-erect, distributed throughout the stem, articulated; sheaths tubular, striated; blade linear-elliptic, coriaceous, green, apex rounded, mucronate-aristate, margin crenate, spreading. **Inflorescence** apical, racemose, arching, densely many-flowered; peduncle short, terete, thin, slightly arched; rachis thin, terete, arching. **Floral bracts** shorter than the ovary, triangular. **Ovary** long, 3-grooved. **Flowers** up to 12, simultaneous, resupinate, bright orange-red; without fragrance. **Sepals** free, fleshy, margin entire, 5-veined; dorsal sepal spreading, elliptic-oblong, rounded, awned; lateral sepals partly spreading, with a dorsal keel, prominently awned. **Petals** free, straight and spreading transversely, obovate, slightly emarginate, 5-veined, margin minutely erose-crenulate, spreading. **Lip** united to the column, bilobed, basally deeply cordate; ecallose, disc provided with a single low, wide, thick keel that reaches the apical sinus of the lip, lateral lobes semi-ovate, with a short incision beyond the middle, margin erose, spreading. **Column** thin, straight, long, ending in a pair of small, rounded wings. **Clinandrium-hood** short, margin entire. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, compressed. **Rostellum** apical, slit. **Nectary** penetrating less than 1/4 of the ovary, thin, smooth.

OTHER SPECIMENS: PERU: Amazonas: Luya; Tullanga, Camporredondo, *Campos 684*, MO! Tullanga, entre Paseana "La Palma" y Cerro Huicsocunga, 2700-3000 m, 6 IX 1989, *Diaz 3765*, USM!

DISTRIBUTION AND ECOLOGY: Known only from the type locality in Luya Province, Amazonas, Peru; on the Cordillera Oriental, terrestrial at 2700-3300 m altitude. Flowering in September.

RECOGNITION: *Epidendrum camilo-diazii* belongs to the Coronatum group, Aristisepalum subgroup, which has a caespitose habit, simple stems, sub-coriaceous leaves, a racemose inflorescence without spathaceous bracts, and the aristate sepals. The species is recognized by the tall stems (to 90 cm), bright orange-red flowers, bilobed, emarginate lip with a single wide, low, fleshy keel, and straight, obovate, emarginated petals, sepals and petals 5-veined, and a long (11-12 mm), straight column. It is very similar to *Epidendrum vegae* Chocce & Hágsater which is a short, lithophytic herb, stems to 19 cm tall, has large red to bright orange flowers with a short (7 mm), thin column, 5-veined sepals and petals, the lip 3-lobed with 3 low parallel keels, and a very small, semi-orbicular, entire, mid-lobe. It is closely related to *Epidendrum jalcaënse* which is epiphytic and tall (to 56 cm), petals 6-veined, the 3-lobed lip has 3-5 keels, the mid-lobe is emarginate forming a couple of semi-orbicular lobes, and the 10 mm long column is stout and thick.



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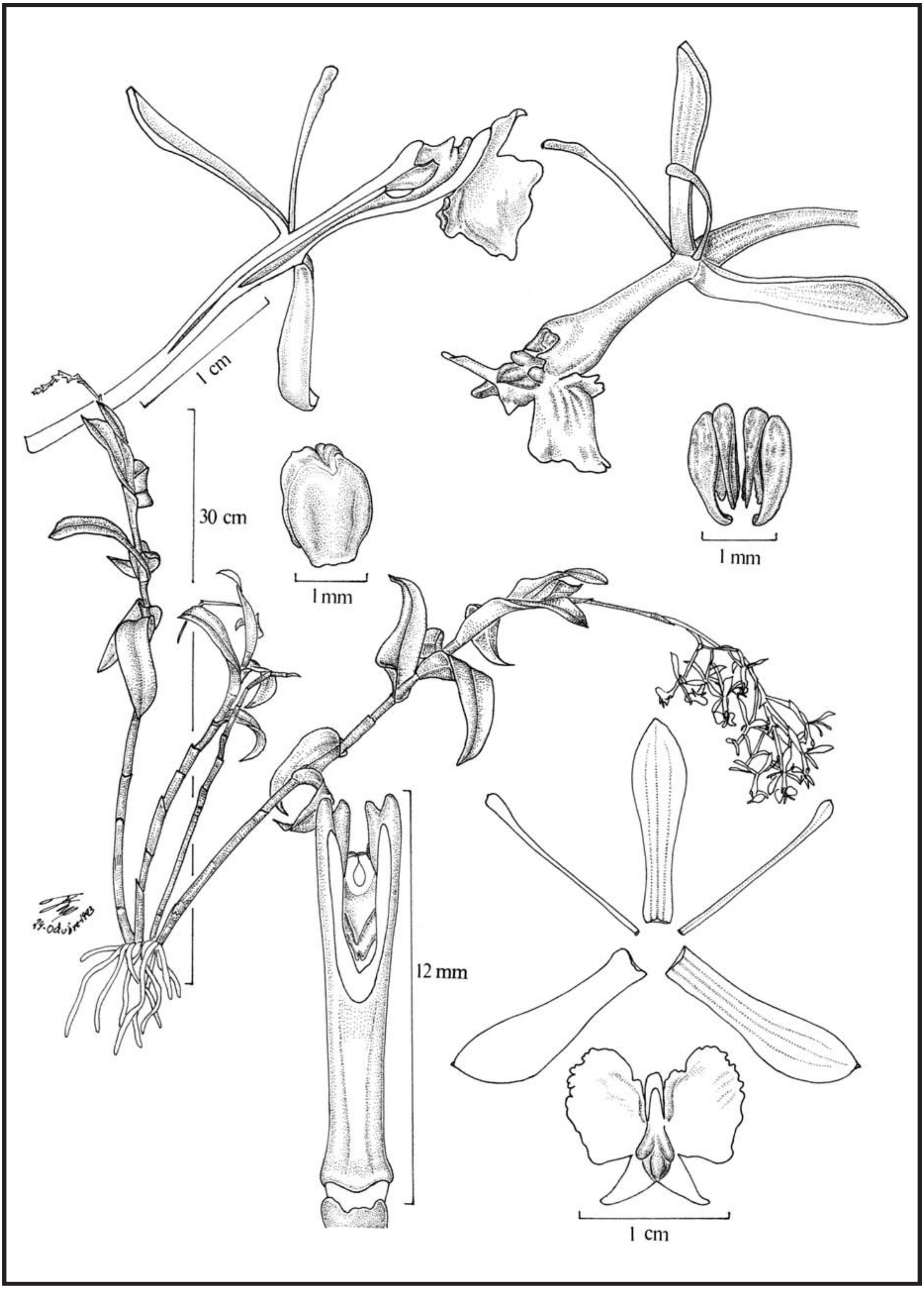
CONSERVATION STATUS: DD. Data deficient. Known only from the type locality.

ETYMOLOGY: In honor of Camilo Díaz Santibañez, peruvian botanist who has collected extensively in north-eastern Peru, participated in the project Flora of Peru since its inception, and participated in the collection of the type material. He is presently at the Universidad Peruana Cayetano Heredia in Lima, Peru.

REFERENCES: Chocce, M, S. Dalström, E. Hágsater & J. Arnaiz, 2010. *Epidendrum jalcaënse* (Orchidaceae), a new species from northern Peru, **Lankesteriana** 9(3): 529-531.

ACKNOWLEDGEMENTS: We thank the staff at the San Marcos Herbarium (USM) for their collaboration and José Campos for his help with the collection data.

Authors: E. Hágsater & M. Chocce **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM CAPRICORNU Kraenzl. **Plate 1309**

EPIDENDRUM CAPRICORNU Kraenzl., Bot. Jahrb. Syst. 54(117): 24. 1916.

Type: PERU: Cajamarca: Prov. Jaën, an den Ostabhängen der Cordillere über Tabaconas, 2100-2500 m, May 1912, ***A. Weberbauer 6296.*** Holotype: K-L! Isotypes: AMES! AMO! F!

Hierba epífita, simpodial, cespitosa, erecta, ca. 85 cm de alto. **Raíces** basales, carnosas, 2-3 mm de grosor. **Tallos** sencillos, tipo caña, delgados, teretes en la base a lateralmente aplanados en el ápice, erectos, rectos, 50 x 0.4-0.9 cm; cubiertos en el 1/3 basal por vainas tubulares no foliares, escariosas y fibrosas con el tiempo, 4.5-5 cm de largo. **Hojas** 11, distribuidas en los 2/3 apicales, dísticas, articuladas, erecto subextendidas, desiguales en tamaño (las basales más pequeñas); vaina tubular, finamente estriada, 2.5-4 x 0.4-0.9 cm; lámina oblongo elíptica, aguda, gramínea, margen entero, extendido, 3-11 x 1.5-3.3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, paniculada, erecta, pluriflora, laxa, ca. 35 cm de largo; pedúnculo delgado, lateralmente aplanado, ancipitoso, erecto, recto, 10-18 cm de largo; cubierto por 3 brácteas tubulares, escariosas, acuminadas, parcialmente imbricadas, 3-8 cm de largo; raquis terete, delgado; con 8 racimos, subextendidos, paucifloros; cada uno de ellos con una bráctea basal angostamente triangular, acuminada, 4.5 cm de largo. **Brácteas florales** más cortas que el ovario, angostamente triangulares, acuminadas, abrazadoras, 3-7 mm de largo. **Ovario** terete, delgado, no inflado, no ornamentado, 20-26 mm de largo. **Flores** ca. 70, generalmente menos, simultaneas, resupinadas, con la superficie dorsal de los sépalos pardo purpúreo, la superficie ventral amarillo pálido, el labelo de color púrpura azulado en ocasiones el disco con una macula de color púrpura intenso; sin fragancia. **Sépalos** extendidos a ligeramente reflexos, libres, angostamente oblanceolados, agudos, 3-nervados, no ornamentados, margen entero, 14-15 x 3-4 mm; los **laterales** ligeramente oblicuos. **Pétalos** libres, filiformes, redondeados en el ápice, 1-nervados, margen entero, extendido, 15 x 0.5 mm. **Labelo** unido a la columna, 3-lobado, profundamente cordado en la base, 10 x 8 mm; bicalloso, los callos prominentes, lateralmente aplanados; lóbulos basales falcado-oblongos, fuertemente retrosos, subparalelos, margen extendido, crenado, 4-5 x 6-7 mm; lóbulo apical bilobado, formando un par de lóbulos linear-corniformes, ligeramente divaricados, margen entero, cada lóbulo de 5 x 1 mm. **Columna** recta, muy delgada en los 2/3 basales, gradualmente más ancha hacia el ápice, con un par de alas redondeadas en el ápice, 12 mm de largo. **Clinandrio** reducido, entero. **Antera** obovoide, 4-locular. **Polinios** 4, tipo ala de pájaro, el par interior algo más pequeño. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando ½ del largo de la cavidad estigmática. **Nectario** poco profundo, apenas penetrando el ovario, no inflado, no ornamentado. **Cápsula** no vista.

Epiphytic, sympodial, caespitose, erect **herb**. **Roots** basal, fleshy, thick. **Stems** simple, cane-like, thin, terete towards the base, laterally compressed towards the apex, erect, straight; the basal 1/3 covered by tubular, non-foliar, scarious sheaths, becoming fibrous with time. **Leaves** 11, distributed along the upper 2/3 of the stem, distichous, articulate, erect-sub-spreading, unequal in size (the basal ones smaller); sheath tubular, minutely striated; blade oblong-elliptic, acute, grass-like, the margin entire, spreading. **Inflorescence** apical, paniculate, erect, lax, many-flowered; peduncle thin, laterally compressed, ancipitose, erect, straight; covered by 3 tubular, scarious, acuminate, partly imbricating bracts; rachis terete, thin; composed of some 8 sub-spreading, few-flowered racemes; each with a basal, narrowly triangular, acuminate bract. **Floral bracts** shorter than the ovary, narrowly triangular, acuminate, amplexicaul. **Ovary** terete, thin, not inflated, smooth. **Flowers** ca. 70, generally fewer, simultaneous, resupinate, the dorsal surface of the sepals purple-brown, the ventral surface pale yellow, lip bluish purple, the disc occasionally with a deep purple blotch; without fragrance. **Sepals** spreading to slightly reflexed, free, narrowly oblanceolate, acute, 3-veined, smooth, margin entire; the lateral sepals slightly oblique. **Petals** free, filiform, apex rounded, 1-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base deeply cordate; bicallose, the calli prominent, laterally compressed; basal lobes falcate-oblong, strongly retrorse, sub-parallel, margin spreading, crenate; mid-lobe bilobed, forming a pair of linear-horn-like lobes, somewhat divaricate, margin entire. **Column** straight, the basal 2/3 very thin, the gradually vertically widened towards the apex, with a pair of apical, rounded wings. **Clinandrium-hood** reduced, entire. **Anther** obovoid, 4-celled. **Pollinia** 4, "bird-wing" type, strongly laterally compressed, inner pair smaller. **Rostellum** apical, slit. **Nectary** shallow, barely penetrating the ovary, not inflated.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Endemic to Ecuador and Peru, along the upper reaches of the Amazon basin along the Andes, and the Cordillera Oriental of Peru, epiphytic, at 1700-2750 m altitude. Flowering throughout the year.



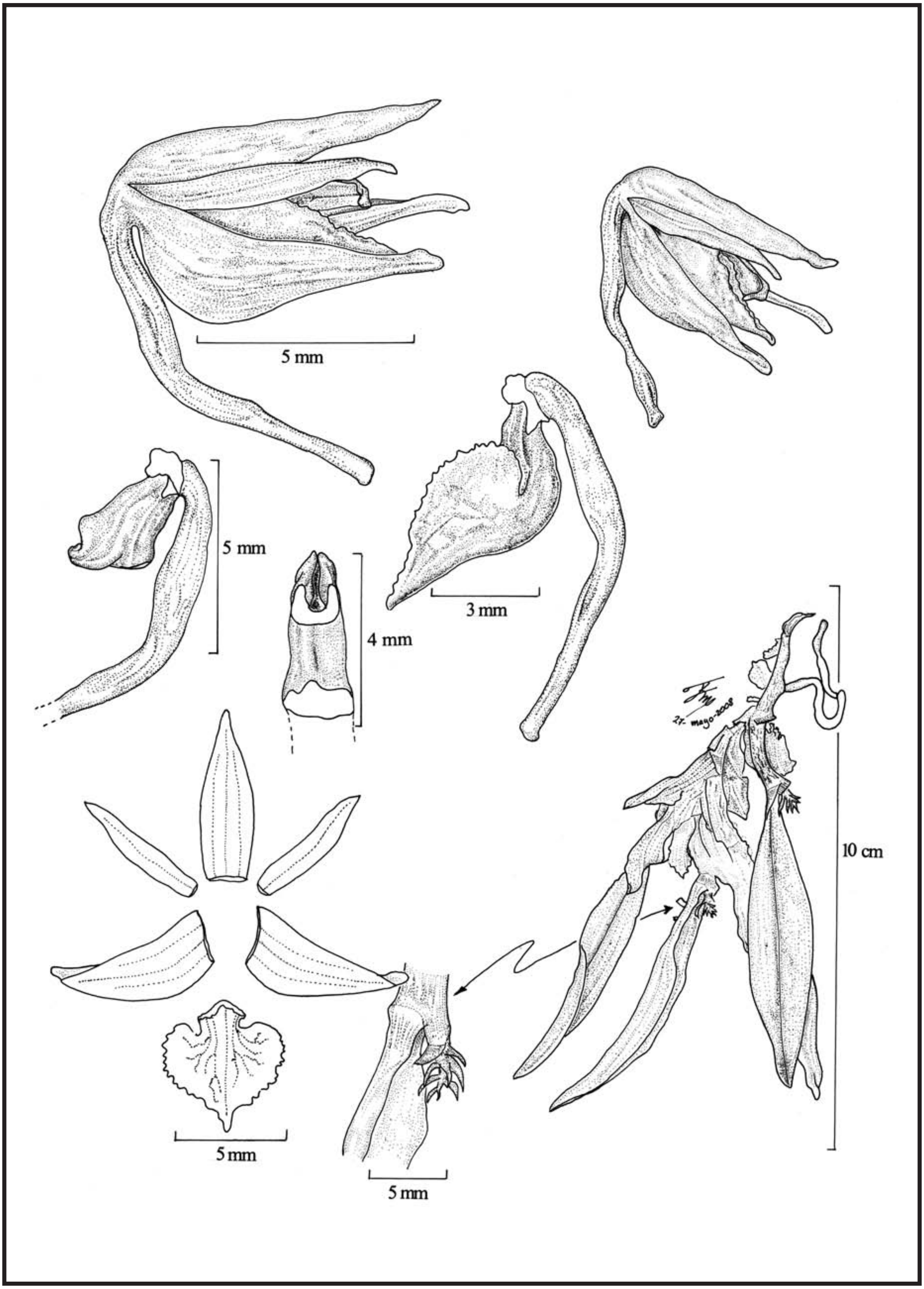
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RECOGNITION: *Epidendrum capricornu* belongs to the Pseudepidendrum Group is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, apical inflorescence, lacking a spathaceous bract, the petals filiform and the lip usually 3-lobed, with 3 parallel fleshy keels, the apical lobe often bifurcate, and the pollinia "bird-wing" type and Porphyreum Subgroup which has flowers colored reddish orange, deep purple or lilac-pink, the calli generally prominent, sometimes horn-like. The species is recognized the flowers with the sepals purple-brown, the ventral surface pale yellow and a purple lip, the somewhat reflexed sepals, 14-15 mm long, the lateral lobes of the lip slightly falcate, and the mid-lobe deeply emarginate, forming a pair of linear, horn-like, somewhat divaricate lobes. *Epidendrum peraltum* Schltr. has taller plants, to 2.5 m, with lanceolate leaves, 5.5-20 x 2.5-4.6 cm; sepals 14-16 mm long greenish yellow tinged with pink to totally dirty pink, sepals spreading, lateral lobes of the lip strongly falcate, mid-lobe forming a rectangular isthmus with an apical pair of linear, strongly divaricate lobes.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *caprinus* goat, and *cornus* horn, in reference to the shape and position of the apical lobes of the lip, which are reminiscent of the horns of a goat.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM CARDIODONTATUM Hágsater & Dodson **Plate 1310**

EPIDENDRUM CARDIODONTATUM Hágsater *et* Dodson*, sp. nov.*

Type: COLOMBIA/ECUADOR: Wächst am Bäumen in den obersten Gebirgswäldern auf dem Páramo de Loliosu*, über Tulcan (Forest of "Parimo in Loliozu near Volcano"), 3000-3400 m, ***Lehmann B. T. [Bentham trustees] 233.*** Holotype: NY! (Illustration voucher). Isotype: K-L!

Epidendro ilinizae Hágsater & Dodson simile sed inflorescentia multiflora, foliis longioribus et angustioribus, floribus minoribus, petalis linearibus et labelli margine manifeste eroso-dentato divergens.

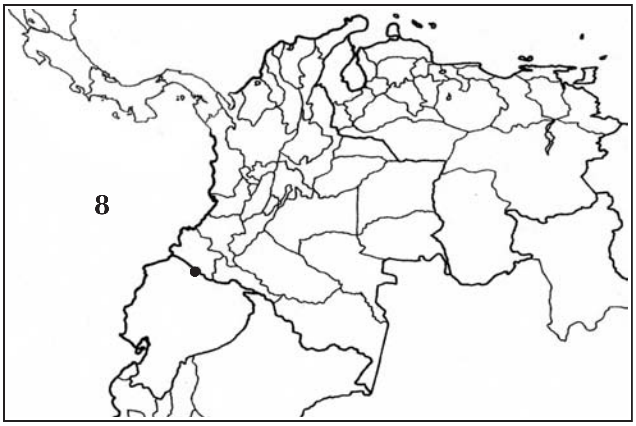
Hierba epífita, cespitosa, simpodial, colgante, 7-9 cm de largo (incluyendo la longitud de la hoja). **Raíces** basales, delgadas, escasas, 1-2 mm de grosor. **Tallo** colgante, constituido por 3 entrenudos, los dos basales muy cortos y el apical, alargado y algo engrosado, formando un pequeño seudobulbo fusiforme, 3.5 x 0.2-0.5 mm; el tallo nuevo producido de un entrenudo basal del tallo anterior; completamente cubierto por vainas no foliares, anchamente ovadas al extenderse, acuminadas, amplexicaules, 14-20 mm de largo. **Hoja** 1, en el ápice del tallo, colgante, articulada; vaina tubular, finamente estriada, 10 mm de largo; lámina elíptica a oblongo elíptica, aguda, rugosa, conduplicada en la base, coriácea, margen entero, extendido, 4.5-6 x 0.8-1.3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, subsésil, pauciflora, opuesta a la lámina foliar, ca. 5 mm de largo. **Brácteas florales** más cortas que el ovario, angostamente triangulares, acuminadas, 2-4 mm de largo. **Flores** 7, sucesivas, no resupinadas, sin datos de color ni fragancia. **Ovario** terete, delgado, no inflado, no ornamentado, 9-10 mm de largo. **Sépalos** entreabiertos, libres, carnosos, glabros, 3-nervados, márgenes enteros, extendidos, 7.5-8 x 2.3-2.6 mm; el **dorsal** angostamente ovado-elíptico, cortamente acuminado; los **laterales** triangular ovados, con una arista dorsal prominente, oblicuos. **Pétalos** entreabiertos, libres, lineares, ligeramente oblicuos, agudos, 1-nervados, glabros, márgenes enteros, extendidos, 6.5 x 1 mm. **Labelo** unido a la columna, carnoso, entero, subcordiforme, base cordada, ápice apiculado, el apículo angostamente redondeado, margen extendido, eroso dentado; los lados erectos abrazando el ápice de la columna, sin envolverla por completo; ecalloso y sin quillas, 5 x 5.5 mm. **Columna** corta, gruesa, recta, formando un ángulo angosto con respecto al ovario, 4 mm de largo. **Clinandrio** reducido, margen denticulado. **Antera** no vista. **Polinios** no vistos. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma**, **Nectario** y **Cápsula** no vistos.

Epiphytic, pendent, caespitose, sympodial, small **herb. Roots** basal, thin, scarce. **Stem** pendent, constituted by 3 internodes, the basal ones very short and the apical one elongate and somewhat thickened and forming a fusiform pseudobulb; the new stem produced from the basal internodes of the previous stem, completely covered by non-foliar sheaths, widely ovate when spread, acuminate, amplexicaul. **Leaf** 1, at the apex of the stem, pendent, articulate; sheath tubular, minutely striated; blade elliptic to oblong-elliptic, acute, rugose, conduplicate at the base, coriaceous, margin entire, spreading. **Inflorescence** apical, sub-sessile, few-flowered, opposite the leaf. **Floral bracts** shorter than the ovary, narrowly triangular, acuminate. **Flowers** 7, successive, non-resupinate, without color information. **Ovary** terete, thin, not inflated, unornamented. **Sepals** partly spreading, free, fleshy, glabrous, 3-veined, margins entire, spreading; **dorsal** sepal narrowly ovate-elliptic, short-acuminate, **lateral** sepals triangular-ovate, apex dorsally prominently awned, oblique. **Petals** partly spreading, free, linear, acute, 1-veined. **Lip** sub-cordiform, base cordate, apex apiculate, the apicule narrowly rounded, margin spreading, erose-dentate; the sides erect, embracing the apex of the column without completely covering it; ecallose, without keels. **Column** short, thick straight, forming a narrow angle with the ovary. **Clinandrium-hood** reduced, margin denticulate. **Rostellum** sub-apical, slit.

OTHER SPECIMENS: None seen.

DISTRIBUTION AND ECOLOGY: Known only from the border between Colombia and Ecuador, above Tulcán, epiphytic, at 3000-3400 m altitude. Flowering in July and August.

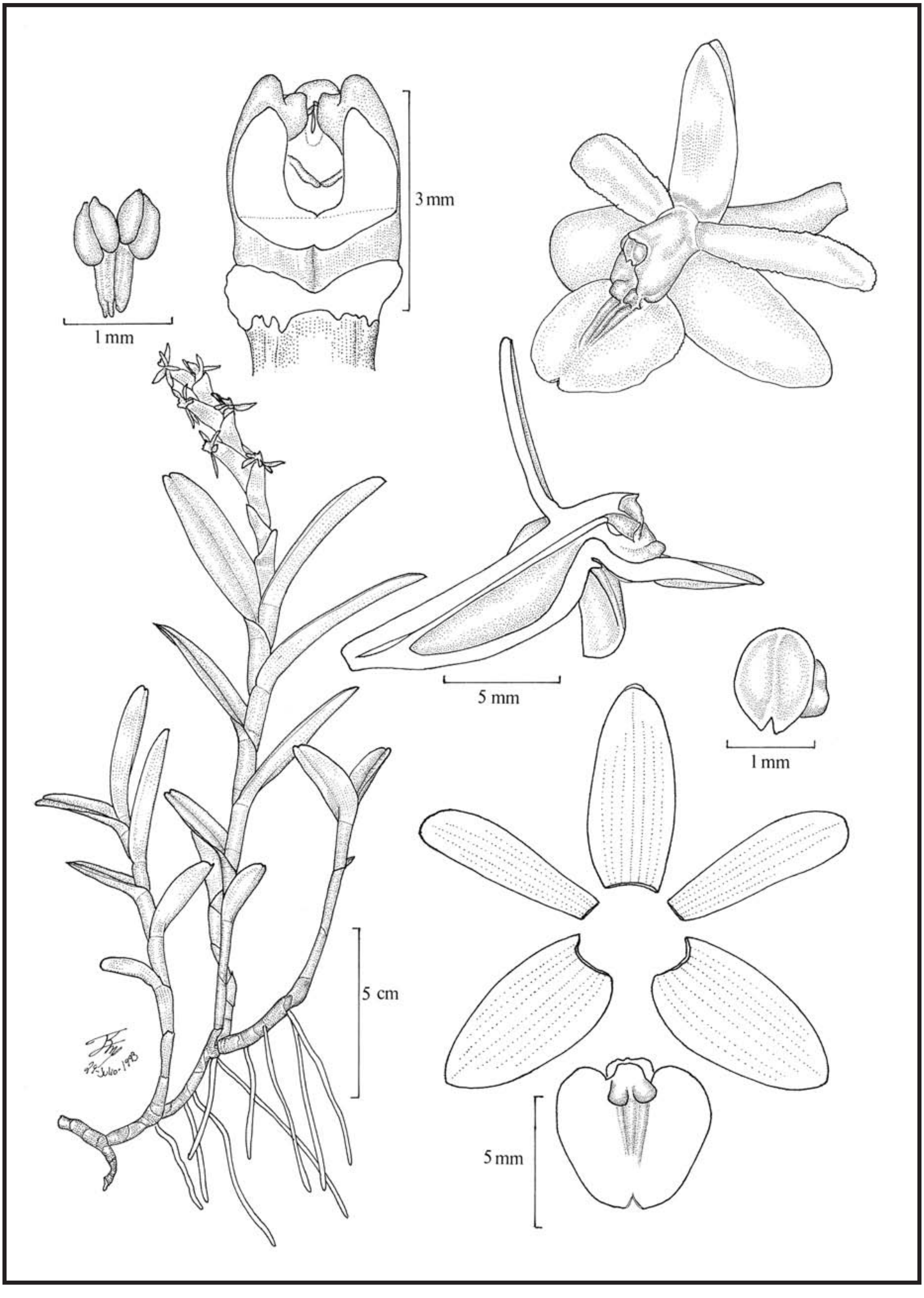
RECOGNITION: *Epidendrum cardiodontatum* belongs to the Kalopternix group, Garayi subgroup which is recognized by the small, caespitose, hanging plants, with stems slightly thickened, apically unifoliate, the inflorescence sub-sessile, and the lip ecallose. The species is recognized by the elliptic to oblong elliptic leaves, 4.5-6 x 0.8-1.3 cm, multi-flowered inflorescence, the peduncle and rachis about 5 mm long, sepals 7.5-8 mm long, and linear petals, 6.5 x 1 mm, and the margin of the lip erose-dentate. *Epidendrum platyphylloserpens* Hágsater has wider leaves, 1.7-2.2 cm wide, somewhat longer inflorescence (peduncle and rachis ca. 13 mm long), and the narrowly ovate petals 7 x 2 mm. *Epidendrum ilinizae* Hágsater & Dodson has a single flowered inflorescence, somewhat larger flower, sepals 10-13 mm long, and lanceolate petals 11 x 3.4 mm, and the margin of the lip minutely erose. *Epidendrum carmelense* Hágsater & Dodson is vegetatively very similar, but the inflorescence is 1-2 flowered, sepals 10 mm long, and the petals are ovate-elliptic, 3.5 mm wide.



*NOTE: We have not located the Páramo de Loliosu, but presume it may be somewhere in the area of the Nevado de Cumbal, W of Tulcan.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek καρδια, heart, and οδοντος, tooth, in reference to the toothed margin of the heart-shaped lip that distinguishes this species.



EPIDENDRUM CARDIOPHORUM Schltr. **Plate 1311**

EPIDENDRUM CARDIOPHORUM Schltr., Repert. Spec. Nov. Regni Veg. 9: 214. 1911.
Type: COSTA RICA: In den Wäldern von Tsaki, Calamanca [Talamanca], c. 200 m Ü. d. M., April 1895, ***Henri Pittier 9519.*** Holotype: BR! Isotypes: CR! G [x2]! US 815035! Z!; Tracing of type AMES (bar code: 00070175)!

Hierba epífita, de simpodio rastrero o escandente, 20-35 cm de alto incluyendo la inflorescencia. **Rizoma** alargado, de 2.5-4 cm de largo. **Raíces** basales, de los 4-5 nudos basales, carnosas, delgadas, 0.5-1.5 mm de grosor. **Tallos** sencillos, los nuevos se originan del 4° ó 5° entrenudo del tallo anterior, tipo caña, lateralmente comprimidos hacia el ápice, rectos a ligeramente sinuosos, 7-20 x 0.15-0.6 cm. **Hojas** 3-5, raramente 6 o 7, distribuidas hacia la mitad apical del tallo; vaina tubular, lateralmente comprimida, lisa, 10-30 x 2.2-6.0 mm; lámina foliar articulada, elíptica a angostamente elíptica, ápice bilobado, margen entero, subcoriácea, lisa, verde; 3-10 x 0.8-2 cm. **Bráctea espatácea**: ausente. **Inflorescencia** apical, dística, racemosa, del tallo maduro, florece una sola vez, dística, suberecta, en ocasiones arqueada, 6-17 cm de largo; pedúnculo y raquis lateralmente comprimidos, ancipitosos, no ornamentados, sinuosos o en ligero zigzag; el pedúnculo con 1-3 brácteas, conduplicadas, semejantes a las florales, 7-13 x 3-5 mm. **Brácteas florales** desiguales, progresivamente más cortas, igual o más cortas que el ovario, triangulares o triangular-ovadas, conduplicadas, agudas, no imbricadas, divergentes al tallo, sin ser perpendiculares a este, con quilla dorsal prominente que se continua con el raquis, la mayor anchura en la base, 7-11 x 4-6 mm. **Flores** 7-10, dísticas, el labelo siempre orientado hacia el raquis, sucesivas, llegando a estar todas abiertas en diferentes estados de ántesis en un momento dado, concoloras, verdes. **Ovario** dilatado hacia el ápice, lateralmente comprimido, curvo de la parte inferior, recto en la parte superior, no ornamentado, 8-13 mm de largo, 3-4 mm de ancho. **Sépalos** extendidos a reflexos, libres, glabros, coriáceos, ovados a elípticos, margen extendido, 7-nervados, 7-7.5 x 2-3.7 mm; el dorsal agudo a redondeado, 7-8 x 2.5-4 mm; los laterales oblicuos, agudos a obtusos, 7-8 x 3-4 mm. **Pétalos** extendidos a reflexos, oblicuos, angostamente oblanceolados a linear oblanceolados, generalmente redondeados a obtusos, raramente agudos, en ocasiones ligeramente retusos, margen extendido, diminutamente eroso-papiloso, suculentos, 5-nervados, 6-8 x 2-3 mm. **Labelo** unido a la columna, entero, ovado-cordiforme a suborbicular, cordado en la base, ápice redondeado a ligeramente emarginado o retuso, raramente agudo, margen diminutamente eroso, 4-5.5 x 3.5-6 mm; bicalloso, callos lateralmente comprimidos; con tres pequeñas quillas que se extienden hasta la mitad del labelo, formando 2 cunículos entre la quilla central y los callos, que se extienden por debajo de los mismos. **Columna** recta, gruesa, terminada en un diente agudo a cada lado, 3.2-4 mm de largo. **Clinandrio** reducido, margen entero. **Antera** ovoide, terminada en un ápice bífido, la superficie superior plana, con una quilla roma, baja, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, del doble de largo de los polinios; viscidio semilíquido, transparente. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** de 1/3 del largo de la cavidad estigmática. **Nectario** prominente ocupando casi la totalidad del ovario, formando una vesícula, estrecho en la base de la columna, expandido en el ovario, liso interiormente. **Cápsula** elipsoide, con el perianto persistente, 13-23 x 9-10 mm, con un cuello de 5 mm de largo y un pedicelo de 2 mm de largo.

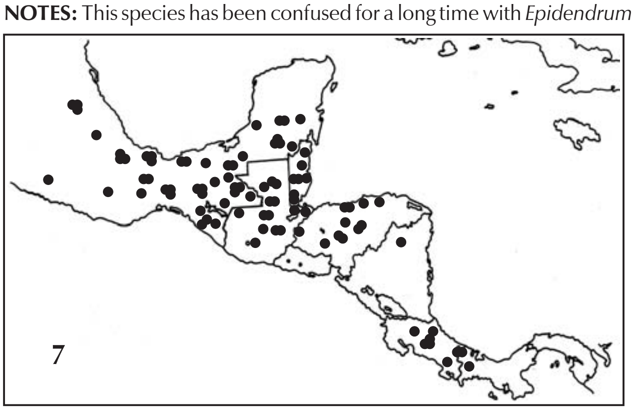
Epiphytic, creeping or scandent, sympodial, **herb**. **Roots** basal, from the elongate rhizome. **Stems** erect, cane-like, laterally compressed towards the apex. **Leaves** 3-5, rarely 6 or 7, distributed along the apical half of the stem; sheath tubular, laterally compressed, smooth; blade articulate, elliptic to narrowly elliptic, apex bilobed, margin entire, sub-coriaceous, smooth. **Inflorescence** apical, distichous, racemose, peduncle and rachis laterally compressed, ancipitose, the peduncle with 1-3 bracts similar to the floral bracts. **Floral bracts** short, triangular-ovate, rounded to acute, conduplicate, progressively shorter, equal to shorter than the ovary. **Flowers** 7-10, successive, all being open at one time in various stages of anthesis, concolor, green. **Ovary** dilated towards the apex, laterally compressed, smooth. **Sepals** spreading to reflexed, free, ovate to elliptic, obtuse to rounded or acute, coriaceous, 7-veined. **Petals** spreading to reflexed, oblique, narrowly oblanceolate to linear-oblanceolate, generally rounded to obtuse, rarely acute, succulent, 5-veined, margin minutely erose-papillose, spreading. **Lip** united to the column, entire, ovate-cordate to sub-orbicular, cordate at the base, apex rounded, retuse or rarely acute; bicallose the calli laterally compressed; with a three low keels that extend to the middle of the lip. **Column** straight, thick, terminating in a acute tooth in each side. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, apex bifid, flat, with a low rounded keel, 4-celled. **Pollinia** 4, obovoid, laterally compressed, sub-equal, caudicles soft and granulose, twice as long as the pollinia; viscidium semi-liquid, transparent. **Rostellum** sub-apical, slit. **Nectary** prominent, penetrating nearly the whole of the ovary, narrowed at the base of the column and then expanded, smooth. **Capsule** ellipsoid, perianth persistent, with a short pedicel and a longer apical neck.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Ranging from Mexico (from San Luis Potosi south) and Mesoamerica along the Atlantic slope: México, Belize, Guatemala, Honduras, Nicaragua, Costa Rica, to western Panama. Epiphytic in tropical rain forest, inundated forest, warm oak forests, mangroves, along rivers, in secondary vegetation and savannah-like vegetation. From sea level to 950 m altitude. Flowering from June to November.

RECOGNITION: *Epidendrum cardiophorum* belongs to the Spathiger group which is recognized by sympodial plants and distichous inflorescence, and the Rigidum subgroup which is characterized by the distichous inflorescence and non-secund, mostly small flowers (lip <12 mm long). The species is recognized by the straight, suberect inflorescence, and 7-8 mm long sepals, the sepals and petals spreading, nearly reflexed, the short, triangular-ovate floral bracts which do not totally cover the ovary, and the entire clinandrium-hood. *Epidendrum rigidum* Jacq. usually has an arching inflorescence, smaller flowers, sepals 4-7 mm long, the sepals and petals only partly spreading, the large (7-22 mm long), ovate, floral bracts covering the whole of the ovary, and the deeply dentate clinandrium-hood. *Epidendrum angustisegmentum* (L.O.Williams) Hágsater has smaller plants (the stems 10-15 cm tall), shorter, wider leaves, and larger flowers (sepals 9-10 mm long) and ovate, 15-20 mm long bracts. *Epidendrum nitens* Rchb.f. is easily recognized by the floral bracts which are divergent from the rachis, ovate and rounded, the sepals and petals only partly spreading, and the pandurate lip. The lip of *E. cardiophorum* is somewhat variable in shape; from Mexico to Honduras it is short, semi-orbicular or cordiform with the apex rounded or retuse, wider than long, while in Costa Rica and Nicaragua the lip is usually somewhat longer than broad, ovate-cordiform and acute, very similar to that of *E. angustisegmentum*, but it can also be short, ovate, cordate at the base with apex rounded to retuse.

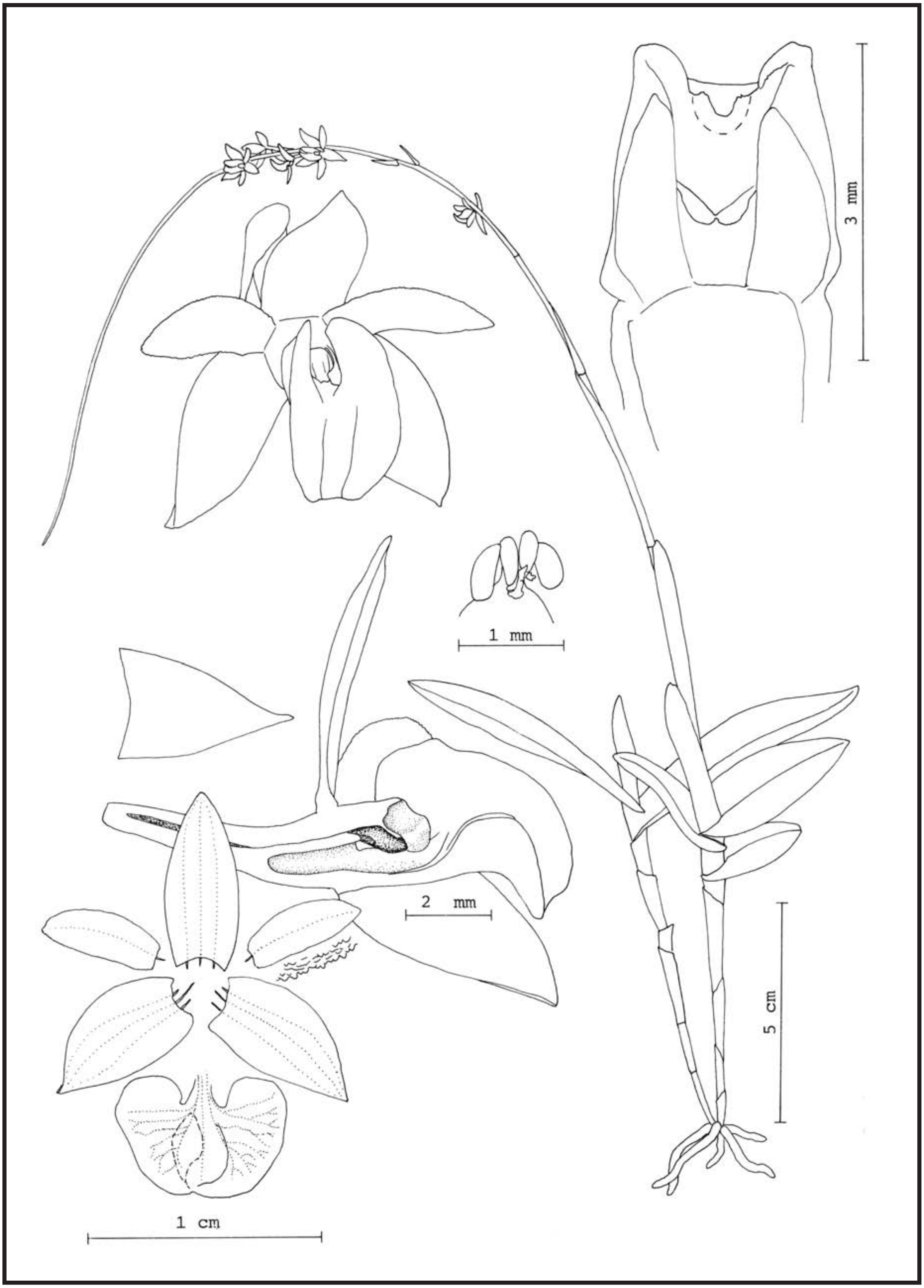
NOTES: This species has been confused for a long time with *Epidendrum rigidum* Jacq., a closely related but distinct species which ranges from Florida through the Antilles and South America as far as Ecuador and Argentina. That species has been collected a few times along the coast of Honduras, Costa Rica and Panama, seed probably blown in from the Antilles but without becoming naturalized. The Illustration published in Icon. Plant. Trop. 1: pl. 095 (1980) was prepared from a plant cultivated at The Selby Botanical Gardens, and not based on the specimen cited from Ecuador. The illustration by Blanche Ames published in Native Orchids of Trinidad & Tobago, pg. 122, (1960), was previously published in Flora of Panama, Ann. Missouri Bot. Gard. 33: 370, (1946) and the Orchids of Guatemala, Fieldiana: Bot: 26: 371, (1952); the origin of the plant was not cited.



CONSERVATION STATUS: Not Threatened. The species is abundant and widely distributed. There is no collecting pressure as it is of no horticultural interest.

ETYMOLOGY: From the Greek καρδια, heart, and οορος, bearing, carrying, in reference to the heart-shape of the lip.

Authors: R. Jiménez M. & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM CAROLII Schltr. **Plate 1312**

EPIDENDRUM CAROLII Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 35.1923.

Type: COSTA RICA: San Geronimo, 1400 m, November 1920, ***C. Wercklé 101***. Holotype: B (destroyed). Lectotype (designated by Hágsater & Salazar, 1990.): AMES 22704!

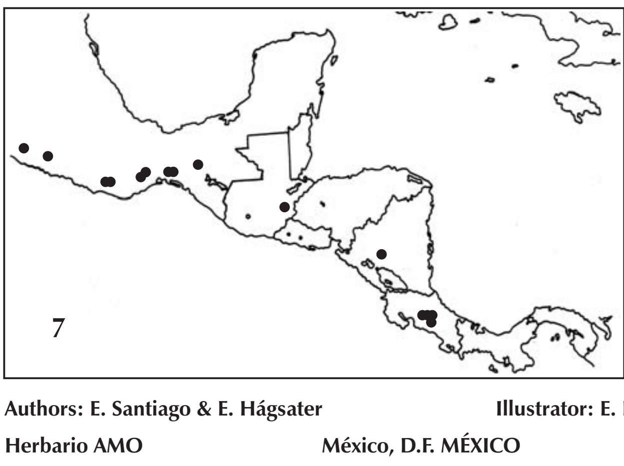
Hierba epífita, simpodial, cespitosa, erecta, de 13-35 cm de alto. **Raíces** basales, carnosas, gruesas, 1-3 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base y lateralmente aplanados hacia el ápice, rectos, 2-8 x 0.2-0.5 cm; cubiertos en los 2/3 basales por vainas tubulares no foliares, escariosas y fibrosas con el tiempo, 8-26 mm de largo. **Hojas** 2-4, agregadas en el ápice de los tallos, desiguales en tamaño (la basal algo más pequeña), erecto-extendidas, articuladas, dísticas, coriáceas; vainas tubulares, finamente estriadas, 4-13 x 4-5 mm; lámina angostamente ovada a ovado-lanceolada, ápice redondeado a agudo, margen entero, 2.5-8 x 1.1-2 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, florece una sola vez, pauciflora, erecta a arqueada, 16-30 cm de largo; pedúnculo lateralmente aplanado, ancipitoso, recto a ligeramente sinuoso, 10.5-20 cm de largo; oculto casi en su totalidad por 4-7 brácteas tubulares, subagudas, ancipitosas, gradualmente más pequeñas hacia el ápice del pedúnculo, las basales parcialmente imbricadas, 12-47 mm de largo; raquis delgado, lateralmente aplanado, recto, 6-13 cm de largo. **Brácteas florales** ligeramente más largas a más cortas que el ovario, triangular ovadas, cortamente acuminadas, abrazadoras, 2.5-9.5 mm de largo. **Flores** 5-23, sucesivas, (aunque llegando a estar casi en su totalidad abiertas de manera simultánea), carnosas, resupinadas, flores cobrizas algo teñidas de purpúreo, labelo amarillo; ligeramente fragantes de noche. **Ovario** terete, delgado, ligeramente dilatado justo detrás del perianto, liso, 5-10 mm de largo. **Sépalos** libres, entreabiertos, subagudos, 3-nervados, margen extendido, 5-7.8 x 2.7-3.4 mm; el **dorsal** angostamente ovado, con el margen apical diminutamente eroso; los **laterales** ovados, oblicuos, con el margen dorsal diminutamente eroso-crenado hacia el ápice. **Pétalos** libres, entreabiertos, oblongo elípticos, oblicuos y algo falcados, redondeados, 1-nervados, margen diminutamente eroso, extendido, 4.5-6.7 x 1.5-1.9 mm. **Labelo** unido a la columna, entero, conduplicado en posición natural, profundamente cordado en la base, anchamente ovado a reniforme, obtuso, margen ligeramente eroso-subcrenado, extendido, 3-5.8 x 4-7 mm; ecalloso; disco con una quilla prominente, muy carnosa, que se desvanece justo antes de llegar al ápice de la lámina. **Columna** recta, corta, gruesa, con un par de alas laterales truncado-redondeadas, 2.2-3 mm de largo. **Clinandrio** reducido, margen entero. **Antera** ovoide, 4-locular. **Polinios** 4, ovoideos, lateralmente aplanados, desiguales; caudículas suaves y granulosas, mas cortas que los polinios. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** pequeños, ocupando 1/4 de la cavidad estigmática. **Nectario** penetrando 1/3 del ovario, no inflado, no ornamentado. **Cápsula** elipsoide.

Epiphytic, sympodial, caespitose, erect **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, terete at the base, laterally compressed above, straight; the basal 2/3 covered by tubular, non-foliaceous, scarious sheaths becoming fibrous with time. **Leaves** 2-4, aggregate towards the apex of the stem, unequal in size (the basal one smaller), erect-spreading, articulate, distichous, coriaceous; sheaths tubular, minutely striated; blade narrowly ovate to ovate-lanceolate, apex rounded to acute, margin entire. **Inflorescence** apical, racemose, flowering only once, few-flowered, erect to arching; peduncle laterally compressed, ancipitose, straight to slightly sinuous, nearly totally hidden by 4-7 tubular, subacute, ancipitose bracts, gradually shorter, the basal ones imbricating; rachis thin, laterally compressed, straight. **Floral bracts** slightly longer to shorter than the ovary, triangular-ovate, short-acuminate. **Flowers** 5-23, successive, the flowers may be nearly all open at one time, fleshy, resupinate, copper colored, tinged purple, the lip greenish yellow; slightly fragrant at night. **Ovary** terete, thin, slightly dilated just behind the perianth, smooth. **Sepals** free, partly spreading, sub-acute, 3-veined, margin spreading; the dorsal sepal narrowly ovate, the apical margin minutely erose; the lateral sepals ovate, oblique, the dorsal margin erose-crenate towards the apex. **Petals** free, party spreading, oblong-elliptic, oblique and somewhat falcate, rounded, 1-veined, margin minutely erose-crenate towards the apex, spreading. **Lip** united to the column, entire, conduplicate in natural position, base deeply cordate, widely ovate-reniform, obtuse, margin slightly erose-sub-crenate, spreading; ecallose, disc with a prominent central, very fleshy keel, which disappears before reaching the apex of the blade. **Column** straight, short, thick, with a pair of lateral truncate-rounded wings. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, 4-celled. **Pollinia** 4, ovoid, laterally compressed, unequal; caudicles soft and granulose, shorter than the pollinia. **Rostellum** subapical, slit. **Nectary** penetrating 1/3 of the ovary, not inflated, smooth. **Capsule** ellipsoid.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Widespread along the Pacific watershed from western Mexico to central Costa Rica, epiphytic, from 1260 to 2000 m altitude. Flowering from April to November, but mainly from September on, fruiting January and February.

RECOGNITION: *Epidendrum carolii* belongs to the Carolii Group which is characterized by the caespitose habit, short, unbranched, laterally compressed stems, thick, coriaceous leaves, and the long, arching, nutant, rat-tail-like inflorescence with a long bracts at the base, and the numerous, successive flowers. The species is recognized by the 2-4 leaves aggregate towards the apex of the short stem, racemose, relatively few-flowered inflorescence, with up to 23 flowers, purple-copper colored sepals and petals, the lip yellow, the lip is widely ovate to reniform when spread, with the margin slightly erose-sub-crenate, and a very fleshy central keel. *Epidendrum probiflorum* Schltr. has a generally paniculate, many-flowered, erect inflorescence, with up to 60 flowers, purple-brown to creamy peach colored flowers, the ovate-triangular lip white, with the margin deeply erose-crenate, and the central fleshy keel concave-sulcate. *Epidendrum laucheanum* Rolfe ex Bonhof, has long, acuminate leaves and a very long, racemose, arching, many-flowered arching-nodding inflorescence, the flowers are ochre to purple-brown, the lip apple-green, the margin entire.

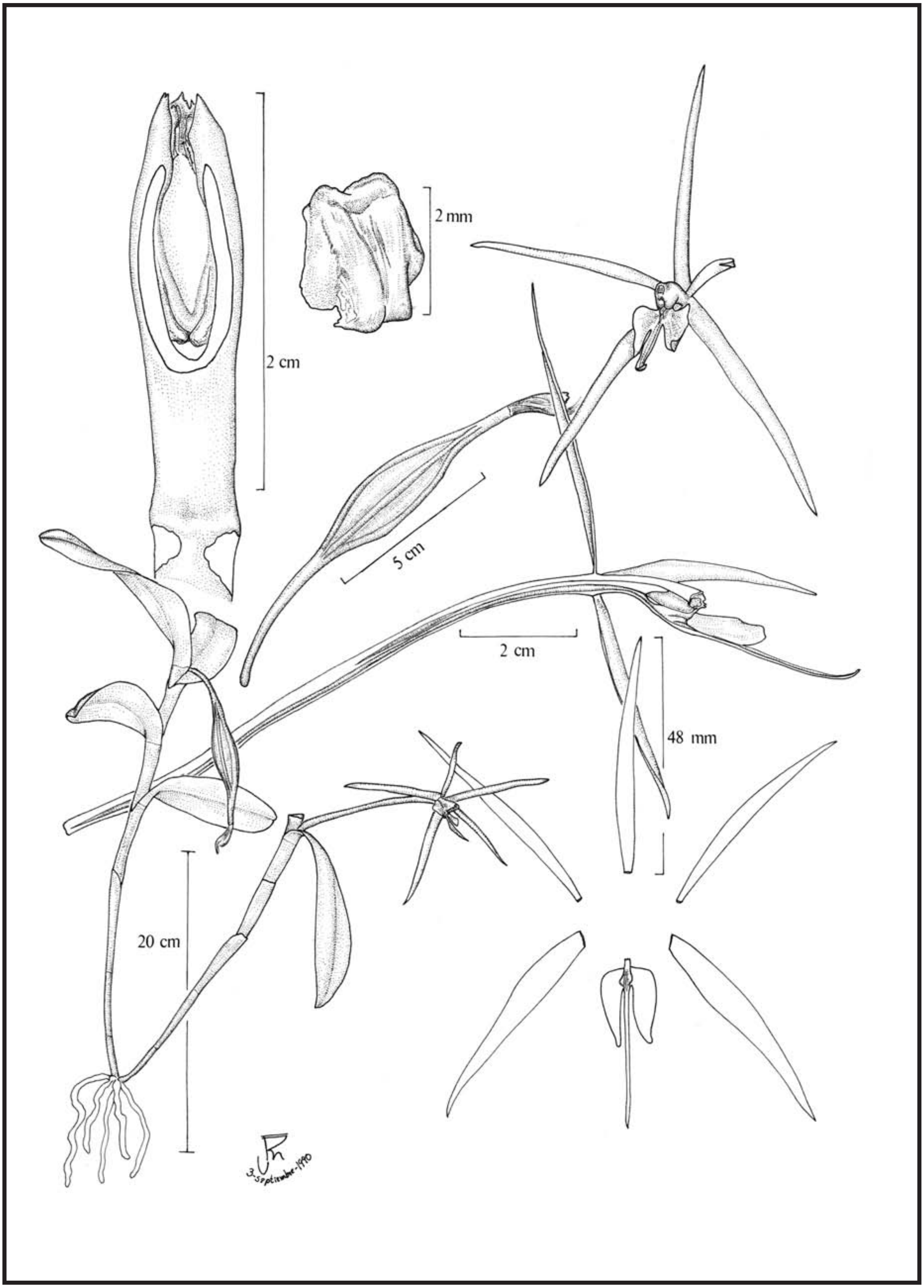


CONSERVATION STATUS: DD. Data deficient. Rare though widespread north of Costa Rica.

ETYMOLOGY: From the Latin *Carolus*, Carl, in honor Karl (Carlos) Wercklé (1860-1924), Alsatian horticulturalist who arrived in Costa Rica in 1897 via New York, and collected numerous plants and orchids, including the type.

REFERENCES: Ames, O. and D.S. Correll, 1952, **Orchids of Guatemala. Fieldiana Botany:** 26: 314-315- Hágsater, E. & G.A. Salazar, 1990. **Icon. Orchid. (Mexico)** 1: pl. 27; Hamer, F., 2001, *Orchidaceae* Juss., in W.D. Stevens et al., (*eds*.), **Flora de Nicaragua** 85(2): 1680. Missouri Botanical Garden Press, St. Louis, Missouri, U.S.A. McVaugh, R., 1985, *Orchidaceae:* **Flora Novo-Galiciana** *16*: 108, The University of Michigan Press, Ann Arbor.

Authors: E. Santiago & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM CARPOPHORUM Barb.Rodr. **Plate 1313**

EPIDENDRUM CARPOPHORUM Barb.Rodr., Gen & Sp. Orch. Nov. 2: 148. 1882.

Type: BRAZIL: [Santa Catarina]: à la Serra do Mar, près Rodeio [today Paulo de Frontin (Toscano & Cribb, 2005)]; without collector. Holotype: AMES!* (original water color). Plate published by Sprunger et al, (eds.) in Icon. Orchid. Brésil 4: t. 32. 1996. Watercolor copy at K-L!

Hierba epífita raramente litófita, simpodial, cespitosa, 29-50 cm de alto incluyendo la inflorescencia. **Raíces** basales, carnosas, 2-3 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente comprimidos, ancipitosos hacia el ápice, 15-43 x 0.5-1.7 cm. **Hojas** 4-6, distribuidas en la mitad apical del tallo, coriáceas; vaina foliar tubular, lateralmente comprimida, ancipitosa, 2.5-4.0 cm de largo; lámina ovada elíptica, ápice bilobado, carina dorsal evidente, 2-3 veces más larga que ancha, 9-14 x 2.5-6.0 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa a pluriracemosa, produce una flor a la vez y florece durante varios años. **Bráctea floral** mucho más corta que el ovario, abrazadora, triangular, acuminada, 2.5-5.0 x 1.8-2.6 mm. **Ovario** largo, terete, no inflado, no ornamentado, 50-120 x 1.2-2.4 mm. **Flores** una a la vez por racimo, si hay dos a tres, producidas de diferentes racimos, sucesivas, resupinadas, frecuentemente cleistógamas, sépalos y pétalos verde a verde amarillentos, labelo y columna blanco, los callos amarillo pálido, fragancia no registrada. **Sépalos** extendidos, linear lanceolados, acuminados, 10-nervados, margen entero, revoluto, 30-60 x 2.5-4.0 mm. **Pétalos** extendidos, linear lanceolados, acuminados, 7-9 nervados, margen entero, revoluto, 30-55 x 1.5-2.5 mm. **Labelo** unido a la columna, trilobado, margen entero, extendido, 35-40 x 20-22 mm; bicalloso, los callos laminares, prominentes, lóbulos laterales oblicuos ovado triangulares, agudos, 15-20 x 5-7 mm; lóbulo medio linear lanceolado, acuminado, con el margen entero, revoluto, 30-35 x 1.0-1.2 mm. **Columna** ligeramente arqueada, dilatada hacia el ápice, 13-20 x 2.0-3.5 mm. **Clinandrio** prominente, eroso dentado. **Antera** ovoidea, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, más largas que los polinios; viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** reducidos. **Nectario** penetrando casi todo lo largo del ovario. **Cápsula** elipsoide, larga; pedicelo de 40-43 x 2-2.5 mm, cuerpo 45-50 x 15-20 mm, ocupa alrededor de 1/2 de la longitud total y se localiza ligeramente arriba de la mitad, cuello 15-20 x 2.0-3.0 mm.

Epiphytic, rarely lithophytic, sympodial, caespitose **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, laterally compressed, ancipitose towards the apex. **Leaves** 4-6, distributed throughout the apical half of the stem, coriaceous; sheath tubular, laterally compressed, ancipitose; blade ovate-elliptic, apex bilobed, with an evident dorsal keel, 2-3 times longer than broad. **Inflorescence** apical, racemosa, to pluri-racemose, producing one flower at a time during several years. **Floral bract** much shorter than the ovary, amplexicaul, triangular, acuminate. **Ovary** long, terete, not inflated, unornamented. **Flowers** one at a time per raceme, if two or three present, produced from different racemes, successive, resupinate, frequently cleistogamous, sepals and petals green to yellowish green, lip and column white, calli pale yellow. **Sepals** spreading, linear-lanceolate, acuminate, 10-veined, margin entire, revolute. **Petals** spreading, linear-lanceolate, acuminate, 7-9-veined, margin entire, revolute. **Lip** united to the column, 3-lobed, margin entire, spreading; bicallose, the calli laminar, prominent; lateral lobes oblique, triangular-ovate, acute; mid-lobe linear-lanceolate, acuminate, the margin entire, revolute. **Column** slightly arching, dilated towards the apex. **Clinandrium-hood** prominent, erose-dentate. **Anther** ovoid, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose, longer than the pollinia; viscidium semi-liquid, transparent. **Rostellum** apical, slit. **Nectary** penetrating nearly all of the ovary. **Capsule** ellipsoid, long, pedicel as long as the body, which is located slightly beyond the middle, apical neck somewhat less than half the length of the pedicel.

OTHER SPECIMENS: VENEZUELA: Bolivar: Piar; Río Aparamán, affluent of Río Acanán near Yuray-Merü rapids, 1.5 km S of SW corner of Amaruay-Tepui, 500 m, 22 IV 1986, *Liesner 20189*, MO! Summit of Amaruay-tepui, S side E half, 950-1100 m, 11 V 1986, *Liesner 20793*, MO! Cerro Guaiquinima, Río Paragua, "North Valley", 1600-1700 m, 10 I 1952, *Maguire 33093*, NY! Roscio, La Escalera km 125 S von El Dorado, 1000 m, 19 III 1959, *Renz 9417*, RENZ! Ibid. km 118, 700 m, *Renz 9426*, RENZ! Cumbre del cerro Guaiquinima, Salto Szezerbanari y alrededores del Río Szezerbanari (Río Carapo) parte central del cerro, 750 m, 22 I 1977, *Steyermark 113436*, MO! **GUYANA:** Potaro-Siparuni region, Camp and lower slopes of Mt. Kopinang , 750-1350 m 9 IV 1988, *Hahn 4411*, MO! Demerara-Berbice; Essequibo River from Monkey Jump to Persuad timber concession, 5 m, 22 V 1993, *Henkel 2106*, AMO! NY! Essequibo River, Moraballi Creek, near Bartica, ca. 10 m, 1 VIII 1929, *Sandwith 103 A*, K-L! **BRAZIL: Roraima:** proximidades da divisa com a Venezuela, km 11-2 do marco BV-9. Cordilheira Paracaima, 3440 ft, 27 IX 1979, *Rosa 3584*, MG! **Bahía**: Mpio. Santa Luzia, una entrada a 11.3 Km a E da sede do municipio, "Serra da Onca" ca. 4,5 km da entrada, 510 m, 23 VII 1996, *Jardim 838*, NY!

OTHER RECORDS: Brazil: Bahía: Ouricana, 600-700 m, *Hágsater 10230*, (Illustration voucher, AMO)!

DISTRIBUTION AND ECOLOGY: Ranging along the Atlantic slope of Venezuela, Guyana and southeastern Brazil. Epiphytic, at 5-1700 m altitude, but mainly at 500-1100 m altitude. Flowering from May to July. In fruit from April to October.

RECOGNITION: *Epidendrum carpophorum* belongs to the Nocturnum Group which is characterized by the sympodial, caespitose plants, short, racemose or pluri-racemose inflorescence, without spathaceous bracts, usually large, star-shaped flowers, with similar sepals and petals, and the Nocturnum Subgroup which has cane-like stems, non-thickened towards the middle, and usually successive flowers; the flowers are mostly indistinguishable in shape. The species is recognized by the laterally compressed stems, ancipitose towards the apex, leaves relatively wide,2-3:1, 2.5-6.0 cm wide, ovary 50-120 mm long, the body of the capsule placed slightly towards the apex of the capsule. It has been confused with *Epidendrum angustilobum* Fawc. & Rendle (syn. *Epidendrum latifolium* (Lindl.) Garay & Sweet) which is abundant in the Antillies, coastal Colombia, Venezuela and the Guyanas, and rare in Costa Rica and Panama, it has leaves 2:1, 2-7 cm wide, a much longer ovary, 120-200 mm long, and the body of the capsule clearly near the apex of the ovary, with a very long pedicel. *Epidendrum macroophorum* Hágsater also has tall stems with ancipitose leaf sheaths, and is very abundant along the Pacific slope of Colombia, Ecuador and northern Peru, rare in Panama, and has large leaves 3-4:1, and a very long ovary, 220-300 mm long, the body displaced towards the apex. *Epidendrum nocturnum* Jacq. is widely distributed in the Neotropics, has terete stems, and relatively short and narrow leaves, a short ovary about as long as the sepals which are 45-62 mm long, with the body of the capsule centered and occupying nearly the whole length of the ovary.

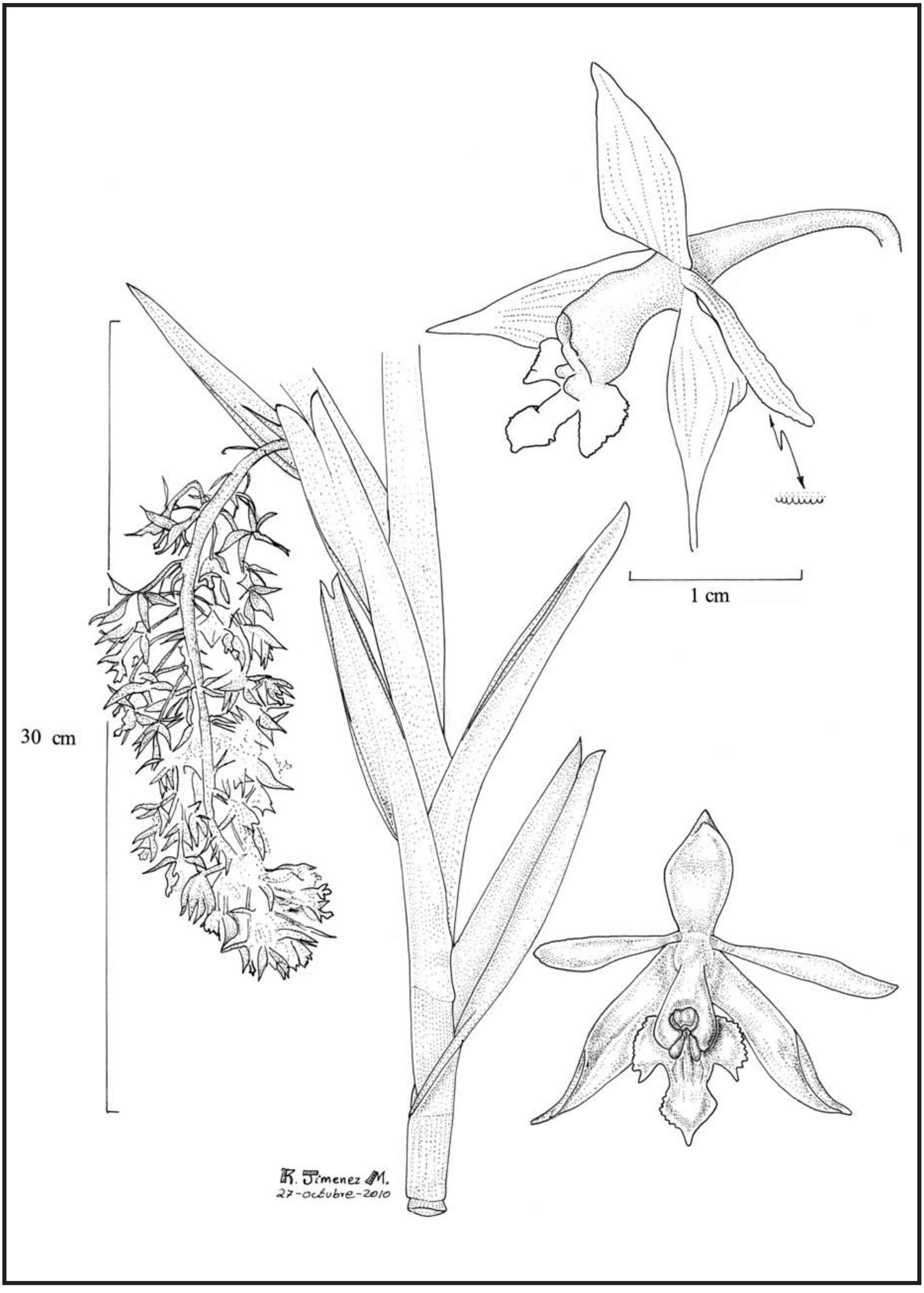


CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek, καρπος, fruit, and φορος, bearing, probably in reference to the frequent capsules produced by this species which is cleistogamous.

REFERENCES: *Carnevali, G., & G. Romero, 1996, Orchidaceae Dunstervillorum VII: The *Epidendrum nocturnum* Alliance in the Venezuelan Guyana and the Guianas, **Lindleyana** 11(4): 239-249. Hágsater, E., & C.H. Dodson, 1999, *Epidendrum macroophorum* Hágsater & Dodson, in E. Hágsater, L. Sánchez S. & J. García-Cruz, (eds.), **Icon. Orchid. (Mexico)** 3: pl. 350. Hágsater, E. & J.D. Ackerman, 1999, *Epidendrum portoricense* Hágsater & Ackerman, in E. Hágsater, L. Sánchez S. & J. García-Cruz, (eds.), **Icon. Orchid. (Mexico)** 3: pl. 376. Cervantes, L., E. Hágsater & M. Soto, 2002, *Epidendrum nocturnum* Jacq., in E. Hágsater & M. Soto, (eds.), **Icon. Orchid. (Mexico):** 5-6: pl. 578. Carnevali, G. & I. M. Ramírez-Morillo, 2003, *Epidendrum* L., in J. Steyermak, P.E. Berry, K. Yatskievych & B.K. Holst, (eds.), **Flora of the Venezuelan Guyana** 7: 335. Toscano de Brito, A.L.V.. & P. Cribb, 2005, **Orquídeas da Chapada Diamantina**, 143-145. Sánchez, L.S., & E. Hágsater, 2008, *Epidendrum angustilobum* Fawc. & Rendle, in E. Hágsater & L. Sánchez S. (eds.), **Icon. Orchid. (Mexico)**: 11: pl. 1102.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM CHARPINII Hágsater & E.Santiago **Plate 1314**

EPIDENDRUM CHARPINII Hágsater *et* E.Santiago, *sp. nov.*

Type: VENEZUELA: Táchira: Páramo de Taima, 3000-3250 m, et in silva montana uda, 2500-3000 m, 12 November 1976, ***André Charpin et Fernand Jacquemoud 13219.*** Holotype: G 232567! (Illustration voucher, plant and pressed flower).

Epidendro klotzscheano Rchb.f. simile sed floribus ochreis et columna viridula, labelli lobulorum lateralium margine dentato et lobuli medio apicem rhombico et acuto distinctum.

Hierba simpodial, cespitosa, erecta, ca. 50+ cm de alto (sólo la porción del tallo vista). **Raíces** basales, gruesas. **Tallos sencillos,** tipo caña, lateralmente comprimidos, erectos, rectos, ca. 1.7 cm de grosor. **Hojas** numerosas, suberectas con respecto al tallo, alternas, articuladas, coriáceas, algo conduplicadas; vaina tubular, finamente estriada, 4-8.5 x 1.4-1.7 cm; lámina lanceolada, ápice redondeado, cortamente bilobado, 14-16.5 x 2.7-3 cm. **Brácteas espatáceas** 2, tubulares, abiertas de un lado en la mitad apical y entonces conduplicadas, acuminadas, cubriendo casi en su totalidad al pedúnculo, escariosas con el tiempo, 11 cm de largo. **Inflorescencia** apical, racemosa, arqueado-nutante, pluriflora, densa, ca. 24 cm de largo; pedúnculo lateralmente aplanado, 5 cm de largo. **Brácteas florales** prominentes, casi tan largas como el ovario, linear lanceoladas, acuminadas, abrazadoras, 15 mm de largo. **Flores** ca. 60, simultáneas, resupinadas, carnosas, de color ocre, la columna verdosa, sin datos de fragancia. **Ovario** corto, terete, no ornamentado, ligeramente dilatado hacia la mitad apical, 15-22 mm de largo. **Sépalos** libres, elípticos, cortamente acuminados, 7-nervados, margen entero, extendido, 13-14 x 6 mm; el **dorsal** extendido; los **laterales** entreabiertos, ligeramente oblicuos. **Pétalos** extendidos, libres, angostamente oblanceolados, ápice redondeado, 3-nervados, ligeramente oblicuos, margen diminutamente papiloso, extendido, 12 x 2 mm. **Labelo** unido a la columna, trilobado, ligeramente cordado en la base, 7 x 6 mm; bicalloso, los callos carnosos, algo lateralmente aplanados, prominentes; disco con 3 quillas carnosas, la central intercallosa, las laterales continuación de los callos, que se desvanecen antes de llegar al ápice del lóbulo medio; lóbulos laterales oblicuamente ovado-dolabriformes, margen dentado, extendido, 2.5 x 4 mm; lóbulo medio oblongo en la mitad basal y rómbico en la mitad apical, agudo, con el margen eroso, 2.5 x 2.5 mm. **Columna** ligeramente arqueada, delgada en la mitad basal y gradualmente más amplia en la mitad apical, el ápice con los bordes laterales carnosos y redondeados, 8 mm de largo. **Clinandrio** corto, margen entero. **Antera** reniforme. **Polinios** no vistos. **Rostelo** apical, hendido. **Lóbulos laterales del estigma**, **Nectario** y **Cápsula** no vista.

Sympodial, caespitose, erect, tall **herb**. **Roots** basal, thick. **Stems** simple, cane-like, laterally compressed, erect, straight, thick. **Leaves** numerous, sub-erect, alternate, articulate, coriaceous, somewhat conduplicate; sheath tubular, minutely striated; blade lanceolate, apex rounded, short bilobed. **Floral bracts** 2, tubular, open on one side above the middle and then conduplicate, acuminate, covering nearly the whole peduncle, becoming scarious with age. **Inflorescence** apical, racemose, arching-nutant, densely many-flowered; peduncle laterally compressed. **Floral bracts** prominent, nearly as long as the ovary, linear-lanceolate, acuminate, amplexicaul. **Flowers** ca. 60, simultaneous, resupinate, fleshy, ochre, with the column greenish. **Ovary** short, terete, unornamented, slightly dilated towards the apical half. **Sepals** free, elliptic, short, acuminate, 7-veined, margin entire, spreading; dorsal sepals spreading, lateral sepals partly spreading, slightly oblique. **Petals** spreading, free, narrowly oblanceolate, apex rounded, 3-veined, slightly oblique, margin minutely papillose, spreading. **Lip** united to the column, 3-lobed, base slightly cordate; bicallose, the calli fleshy, somewhat flattened, prominent; disc with 3 fleshy keels which disappear before reaching the apex of the lip, the central keel born in between the calli, the lateral keels continuous with the calli; lateral lobes obliquely ovate-dolabriform, margin dentate, spreading; basal half of the mid-lobe oblong, the apical half rhombic, acute the margin erose. **Column** slightly arching, the basal half thin, gradually widened towards the apex, the apical wings fleshy and rounded. **Clinandrium-hood** short, margin entire. **Anther** reniform. **Rostellum** apical, slit.

OTHER SPECIMENS: None seen.

OTHER RECORDS: VENEZUELA: Mérida: entre Estanques y El Molino, ca. 2200 m, 5 VIII 2000, *Gerlach s.n.,* digital image, AMO! (Illustration voucher, single flower).

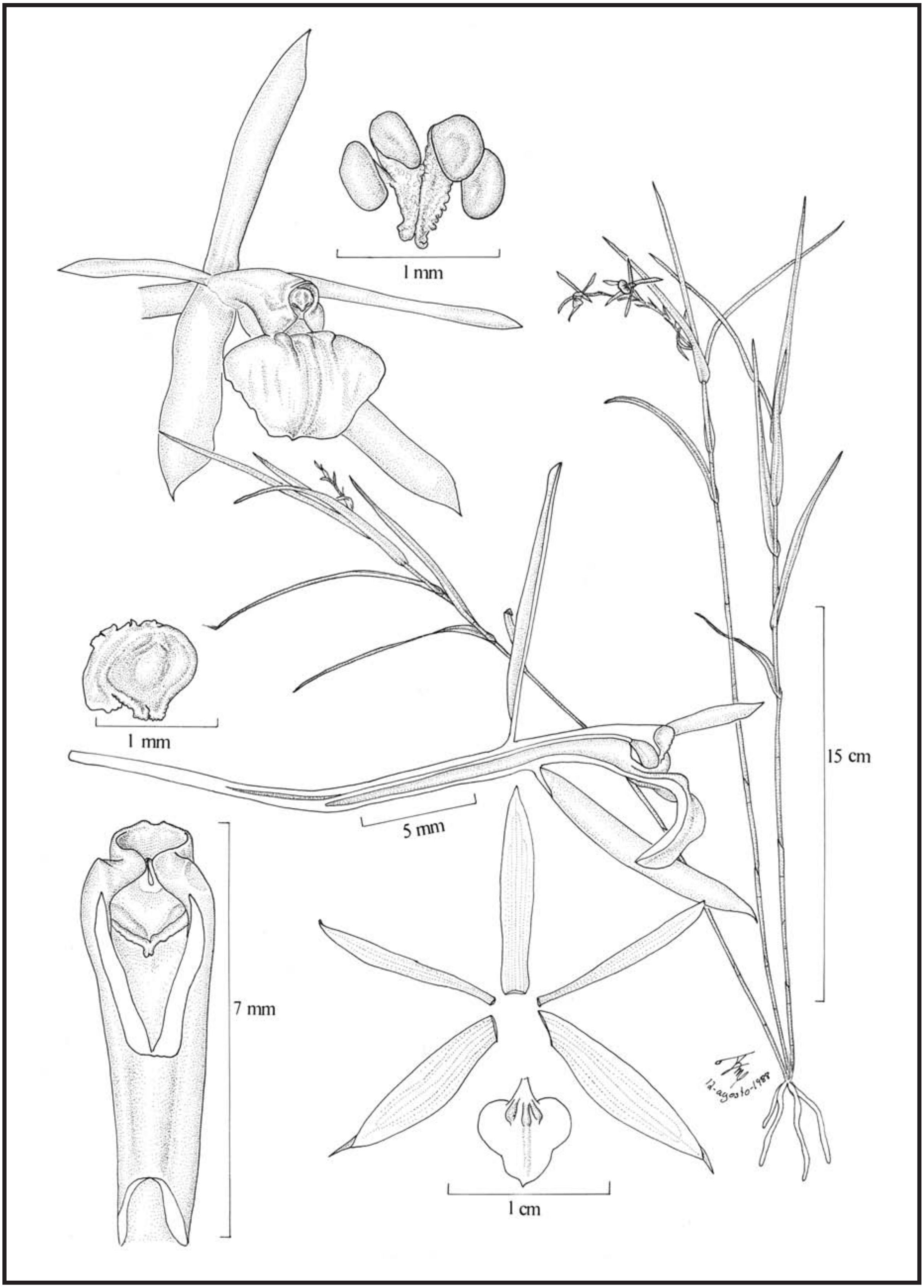
DISTRIBUTION AND ECOLOGY: Known only from Venezuela, along upper Caribbean slope of the Cordillera de Mérida of the Andes, at 2200-3000 m altitude. Flowering from August to November.

RECOGNITION: *Epidendrum charpinii* belongs to the Alpicolum Group and Subgroup which is characterized by the simple, cane-like stems, long, narrow 1-3 spathaceous bracts, fox-tail-like inflorescence and numerous flowers with fleshy lip. The species is recognized by the sub-erect leaves, the racemose inflorescence, flowers ochre with the column somewhat greenish, the apical half of the mid-lobe rhombic, and the margin of the lateral lobes dentate. *Epidendrum klotzscheanum* Rchb.f. is vegetatively very similar, but the flowers are fuchsia to yellow tinged with pink, the lateral lobes of the lip are orbicular, the margin erose, and the mid-lobe oblong with the apex truncate. *Epidendrum morilloi* Hágsater & E.Santiago has a paniculate inflorescence (though the branches are short and few), the creamy white sepals and petals, with a snow-white lip and column, the flowers comparatively smaller, sepals 8-10 mm long.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of the senior collector of the Holotype, André Charpin (b. 1937) specialist in regional and Mediterranean flora at the Conservatoire et Jardin botanique de la Ville de Genève, Switzerland.



EPIDENDRUM CHLOE Rchb.f. **Plate 1315**

EPIDENDRUM CHLOE Rchb.f., Bonplandia 4: 327. 1856.

Type: GUATEMALA: ***Skinner 41.*** Holotype: K-L! Isotype: W-R 50181! tracing of floral segments AMES!

Hierba epífita, simpodial, cespitosa, erecta, 15-30 cm de alto. **Raíces** basales, gruesas, blancas, 1.2-3 mm de grosor. **Tallos** sencillos, tipo caña, teretes, muy delgados, erectos, rectos, 12-26 x ca. 0.1-0.2 cm; cubiertos en la mitad basal por vainas (no foliosas) tubulares, escariosas, fibrosas con el tiempo, 23-45 mm de largo. **Hojas** 4-7, distribuidas en la mitad apical del tallo, suberectas, graminioides, articuladas, dísticas; vaina tubular, finamente estriada, 5-40 x ca. 1-2 mm; lámina linear, acuminada, subcoriácea, flexible, margen entero, extendido, 4-14 x 0.2-0.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, arqueada, pauciflora, más corta que la hoja apical, 3-4.5 cm de largo; pedúnculo terete, delgado, 1-1.3 cm de largo; provisto de 1 bráctea basal, linear lanceolada, largamente acuminada, abrazadora, 11 mm de largo. **Brácteas florales** ligeramente más largas que el ovario a más cortas que este, linear lanceoladas, largamente acuminadas, abrazadoras, 4-11 mm de largo. **Flores** 5-10, simultáneas, abriendo del ápice hacia la base de la inflorescencia, sépalos y pétalos cobrizos, labelo verdoso, ápice de la columna rosado; sin datos de fragancia. **Ovario** terete, delgado, dilatado en los 2/3 apicales, no ornamentado, 13-19 mm de largo. **Sépalos** oblanceolados, agudos, 5-nervados, margen entero, revoluto, 11-13 x 2-3 mm; el **dorsal** libre, ligeramente reflexo; los **laterales** unidos de manera oblicua a la base de la columna, entreabiertos, oblicuos, con un apículo prominente. **Pétalos** extendidos, libres, linear oblanceolados, obtusos, 3-nervados, margen diminutamente papiloso, revoluto, 10-13 x 1.2-1.6 mm. **Labelo** unido a la columna, incipientemente trilobado, recurvado en posición natural, ligeramente cordado en la base, margen diminutamente eroso, extendido, 5-6 x 5.5-7 mm; bicalloso, los callos muy prominentes, carnosos; disco unicarinado, la carina delgada, intercallosa, alargada hasta la parte subapical de la lamina; lóbulos laterales, incipientes, hemielípticos, 2 x 3 mm; lóbulo medio anchamente subtriangular, diminutamente apiculado, 2-2.5 x 2.5-3.3 mm. **Columna** corta, recta, delgada, 6-7 mm de largo. **Clinandrio** prominente (aunque sin sobrepasar el ápice de la columna), margen subentero. **Antera** reniforme, 4-locular. **Polinios** 4, obovoides, lateralmente aplanados; caudículas suaves y granulosas, ligeramente más largas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando ½ de la cavidad estigmática. **Nectario** penetrando 1/2 del ovario, no inflado, no ornamentado. **Cápsula** elipsoide, cuerpo 20 x 10 mm; pedicelo 5 mm de largo; cuello apical con el perianto persistente.

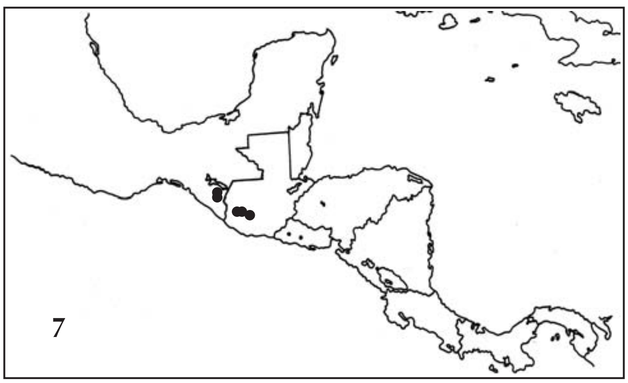
Epiphytic, sympodial, caespitose, erect **herb. Roots** basal, thick, white. **Stems** simple, cane-like, terete, very thin, erect, straight; the basal half covered by non-foliaceous, tubular, scarious sheaths, becoming fibrous with time. **Leaves** 4-7, distributed along the apical half of the stem, sub-erect, grass-like, articulate, distichous; sheath tubular, minutely striated; blade linear, acuminate, sub-coriaceous, flexible, margin entire, spreading. **Inflorescence** apical, flowering only once, racemose, arching, few-flowered, shorter than the apical leaf; peduncle terete, thin, provided with a single linear-lanceolate, long-acuminate bract. **Flowers** 5-10, simultaneous, opening from the apex towards the base of the inflorescence, sepals and petals copper-colored, lip greenish, apex of the column pink. **Ovary** terete, thin, dilated along the apical 2/3, smooth. **Sepals** oblanceolate, acute, 5-veined, margin entire, revolute; the dorsal sepal free, slightly reflexed, lateral sepals obliquely united to the base of the column, partly spreading, oblique, with a prominent apicule. **Petals** spreading, free, linear-oblanceolate, obtuse, 3-veined, margin minutely papillose, revolute. **Lip** united to the column, slightly 3-lobed, recurved in natural position, base slightly cordate, margin minutely erose, spreading; bicallose, the calli very prominent, fleshy; disc one-keeled, the keel thin, reaching the sub–apical part of the lip; lateral lobes hemi-elliptic; mid-lobe widely triangular, minutely apiculate. **Column** short, straight, thin. **Clinandrium-hood** prominent, though not surpassing the apex of the column, margin sub-entire. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose, slightly longer than the pollinia. **Rostellum** apical, slit. **Nectary** penetrating ½ of the ovary, not inflated, smooth. **Capsule** ellipsoid, with a short thin pedicel and apical neck, persistent perianth.

OTHER SPECIMENS: MEXICO: Chiapas: Motozintla de Mendoza, 5 km adelante de la col. Benito Juárez, 1880 m, 30 V 1988, *Cabrera 92*, AMO! MEXU! Ibid. km 16 camino Buenos Aires-Siltepec, 2090 m, col. 15 VII 1987, pressed cult. 12 IV 1992, *Soto 3266*, AMO! Motozintla de Mendoza, km 21 del camino Motozintla-Niquivil, 2460 m, 24 VII 1989, *Soto 6094*, AMO! Ibid. *Soto 6101*, AMO! Ibid. *Soto 6118*, AMO! Ibid. *Soto 6119*, AMO! Ibid. *Soto 6120*, AMO! Ibid. *Soto 6121*, AMO! Ibid. *Soto 6145*, AMO (x2)! **GUATEMALA: San Marcos:** Finca Piamonte, 2400-2500 m, 4 II 1942, *Steyermark 43407*, F! between Finca Piamonte and summit of Volcán Santa Luisa, 2400-3333 m, 5 II 1942, *Steyermark 43489*, F! **Quetzaltenango:** Aguas Amargas, Unterhalb Zunil, 1600 m, 30 VIII 1948, *Renz 4850*, RENZ! Volcan Zunil, 7900 ft, 4 VIII 1934, *Skutch 941*, AMES! Volcán Zunil, 5800 ft, 7 VIII 1934, *Skutch 956*, AMES! **Suchitepéquez:** [**Sololá:**] Volcán Santa Clara, 1250-2650 m, 23 V 1942, *Steyermark 46748*, AMES! F!

OTHER RECORDS: Without data, *201*, sketch of plant, W–R 5833! **MEXICO: Chiapas:** Motozintla de Mendoza, km 16 camino Buenos Aires-Siltepec, 2090 m, 12 VIII 1988, *Soto 3265*, spirit and color photo by Hágsater, in Soto (2007), AMO! (Illustration voucher) Ibid. col. 15 VII 1987, pressed cult. 12 IV 1992, *Soto 3266*, spirit, flower card and illustration, AMO!

DISTRIBUTION AND ECOLOGY: Endemic to the Sierra Madre del Sur overlooking the Pacific Ocean in western Guatemala and neighboring Mexico (Chiapas), epiphytic at 1250-2650 m altitude, mainly above 2000 m. Flowering from February to August.

RECOGNITION: *Epidendrum chloe* belongs to the Chloe Group which is characterized by the characterized by the sympodial, caespitose plants with simple, very thin stems, grass-like, acuminate, sub-erect leaves, a racemose, lax, few-flowered inflorescence, and delicate flowers with a more or less cordate lip. The species is recognized by the copper-colored flowers, the somewhat 3-lobed lip, with hemi-elliptic lateral lobes and mid3-lobe apiculate. *Epidendrum culmiforme* Schltr. and *E. wendtii* Hágsater & Salazar are vegetatively very similar, but the plants are somewhat larger, with a entire, ovate-cordiform to ovate-triangular, acute lip

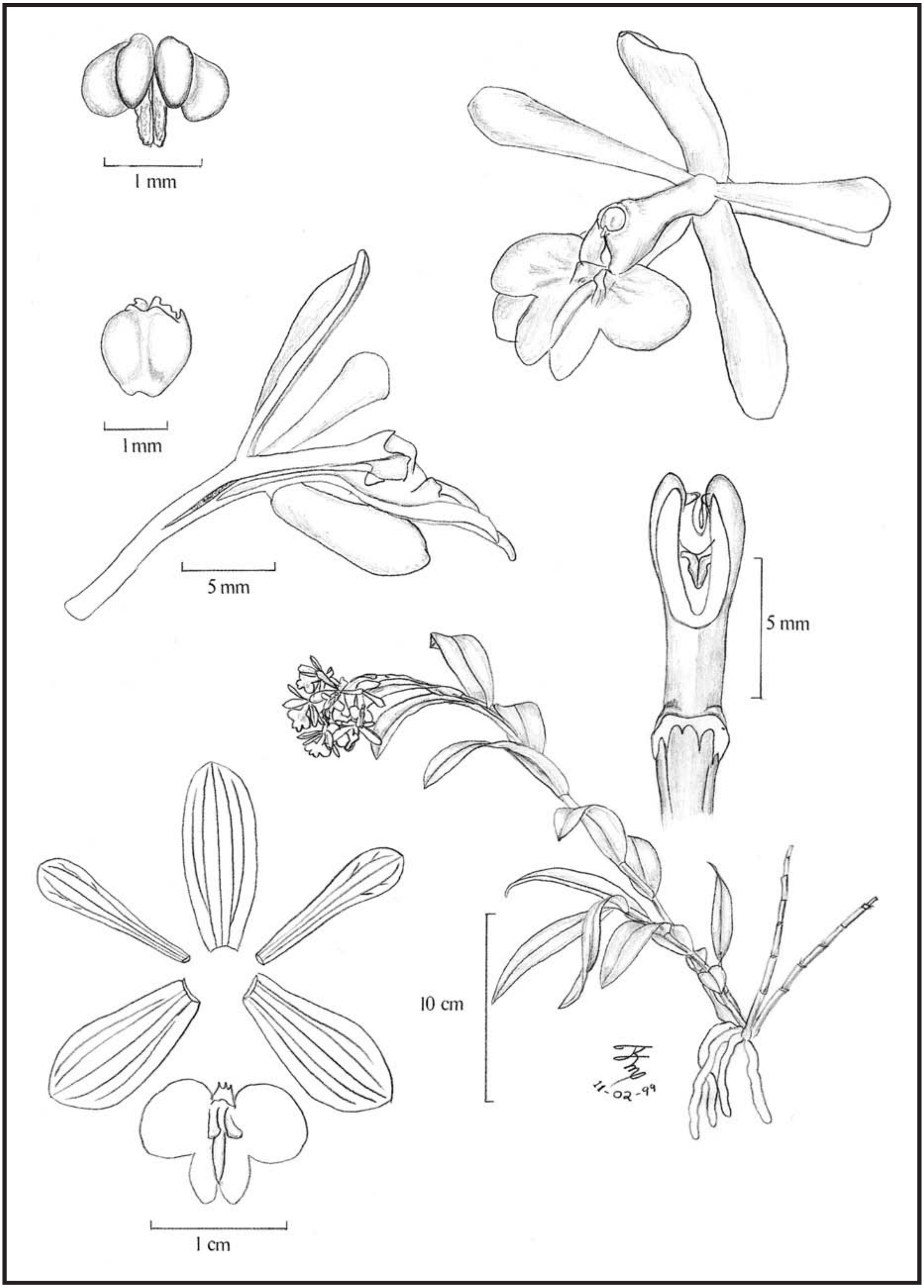


CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: A popular name in Europe, from the Greek, χλοη, meaning green shoot.

REFERENCES: Ames, O., 1923, New or noteworthy orchids, **Schedul. Orchid.** 3: 13. Soto, M., *et al*. 2007, **Orchids of Mexico**, Digital Catalogue: fig. 0309, México, Instituto Chinoín.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM CHLOROPS Rchb.f. **Plate 1316**

EPIDENDRUM CHLOROPS Rchb.f., Gard. Chron. n. s. 14: 524. 1880.

Type: MEXICO: Introduced from Mexico by ***Messrs. Backhouse.*** Holotype: W-R 50055! Tracing of type: AMES 24114! Photo of type: AMES 26030! Watercolor drawing: AMES 50057!

Synonym: *Epidendrum ovalifolium* Pavón ex Lindl., Gen. Sp. Orch. Pl. 104. 1831. Type: MEXICO: ***Pavón***. Holotype: BM! Isotypes: F x4! MA x3!

Epidendrum simile Schltr., Beih. Bot. Centralbl. 36: 408. 1918. Type: MEXICO: Guerrero: Sierra Madre , 500 m, Febr. 1899, ***E. Langlassé 916.*** Holotype: B (destroyed). Isotypes: AMES 73428! G! P!

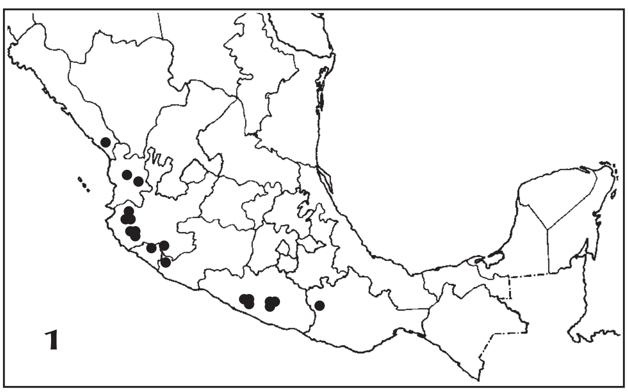
Hierba epífita, simpodial, cespitosa, erecta, 24-65 cm de alto ó más, incluyendo la inflorescencia. **Raíces** basales, carnosas, gruesas, 1.7-3 mm de grosor. **Tallos** sencillos, tipo caña, teretes a algo lateralmente comprimidos, rectos, 17-53 x 0.2-0.5 cm. **Hojas** 6-15, dísticas, distribuidas en los dos tercios apicales del tallo; vaina foliar, tubular, terete a algo lateralmente comprimida, papirácea cuando vieja y después de haber perdido el limbo, 1.5-4 cm de largo; lámina elíptica a ovada, cortamente acuminada, mucronada, ligeramente carinada, subcoriácea, margen entero, extendido, 5-15 x 1.3-3.0 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, pluriracemosa, densa, 7-20 cm de largo, puede producir nuevos racimos de los nudos de la inflorescencia primaria en años posteriores; pedúnculo 2-8 cm de largo, cubierto por 2-5 brácteas imbricadas, tubulares, oblongo triangulares, agudas a acuminadas, 2-4 cm de largo; raquis terete, liso. **Brácteas florales** más cortas que el ovario, progresivamente más cortas hacia el ápice, ovado triangulares, agudas, 1.2-6.0 mm de largo. **Ovario** terete, liso, 8-15 x 0.3-0.5 mm. **Flores** 15-30 por racimo, simultáneas, resupinadas, verdes a verde ocre, tornándose amarillentas al envejecer, fragancia no registrada. **Sépalos** extendidos, libres, glabros, elíptico obovados, obtusos, 3-5 nervados, margen entero, extendido, 11.0-15.5 x 4-6 mm; los **laterales** 4.5-6.5 mm de ancho. **Pétalos** entreabiertos, libres, glabros, angostamente espatulados, obtusos, 3-nervados, margen entero, extendido, 10-14 x 1.6-2.5 mm. **Labelo** unido a la columna, trilobado, base cordada, truncada, carnoso, 8.0-10.7 x 10-13.5 mm; bicalloso, los callos laminares, prominentes, carnosos, en ocasiones se prolongan en dos carinas; el disco con una carina central prominente, carnosa, la cual se prolonga hasta el seno del lóbulo medio; lóbulos laterales suborbicular elípticos, enteros, con venas evidentes, radiales, cortas en la base, 3.5-4.3 x 5.5-6.0 mm; lóbulo medio oblongo rectangular, el margen entero, ápice hendido a cortamente bilobado, 4.0-5.5 x 2.5-3.5 mm. **Columna** recta, obcónica, delgada en la base, 6-7 mm de largo. **Clinandrio** reducido, margen entero. **Antera** obovoide, 4-locular. **Polinios** 4, angostamente obovoides, lateralmente comprimidos; caudículas suaves y granulosas, de longitud similar a ligeramente más largas que la de los polinios; viscidio viscoso, transparente. **Rostelo** apical hendido. **Lóbulos laterales del estigma** de 1/2 de la longitud de la cavidad estigmática. **Nectario** corto, penetrando 1/5 del ovario, angosto, liso. **Cápsula** no vista.

Epiphytic, sympodial, caespitose, erect **herb. Roots** basal, fleshy thick. **Stems** simple, cane-like, terete to somewhat laterally compressed, straight. **Leaves** 6-15, distichous, distributed throughout the apical 2/3 of the stem; foliar sheaths tubular to somewhat laterally compressed, papiraceous when old and after loosing the blade; blade elliptic to ovate, short acuminate, mucronate, slightly carinate, sub-coriaceous, margin entire, spreading. **Inflorescence** apical, pluri-racemose, dense, can continue to produce new racemes over several years from the nodes of the primary inflorescence; peduncle covered by 2-5 imbricating, tubular, oblong-triangular, acute to acuminate bracts; rachis terete, smooth. **Floral bracts** shorter than the ovary, the apical ones progressively shorter, ovate-triangular, acute. **Ovary** terete, smooth. **Flowers** 15-30 per raceme, simultaneous, resupinate, green to ochre-green, turning yellow with age. **Sepals** spreading, free, glabrous, elliptic-obovate, obtuse, 3-5-veined, margin entire, spreading. **Petals** partly spreading, free, glabrous, narrowly spatulate, obtuse, 3-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base cordate, truncate, fleshy; bicallose, the calli laminar, prominent, fleshy, prolonged into a pair of short keels, disc with a prominent, fleshy keel prolonged into the apical sinus; lateral lobes sub-orbicular-elliptic, entire, with evident, short, radiating, thickened veins; mid-lobe oblong-rectangular, margin entire, apex deeply emarginate to short bilobed. **Column** straight, dilated towards the apex. **Clinandrium-hood** reduced, margin entire. **Anther** obovoid, 4-celled. **Pollinia** 4, narrowly obovoid, laterally compressed; caudicles soft and granulose, about as long to longer than the pollinia; viscidium viscous, transparent. **Rostellum** apical, slit. **Nectary** short, penetrating 1/5th of the ovary, narrow, smooth.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Endemic from the Pacific Slope of western and southern Mexico (Sinaloa, Nayarit, Jalisco, Colima, Michoacan, Mexico, Guerrero and Oaxaca. Epiphytic between 350 and 1700 m altitude. Flowering from March to January.

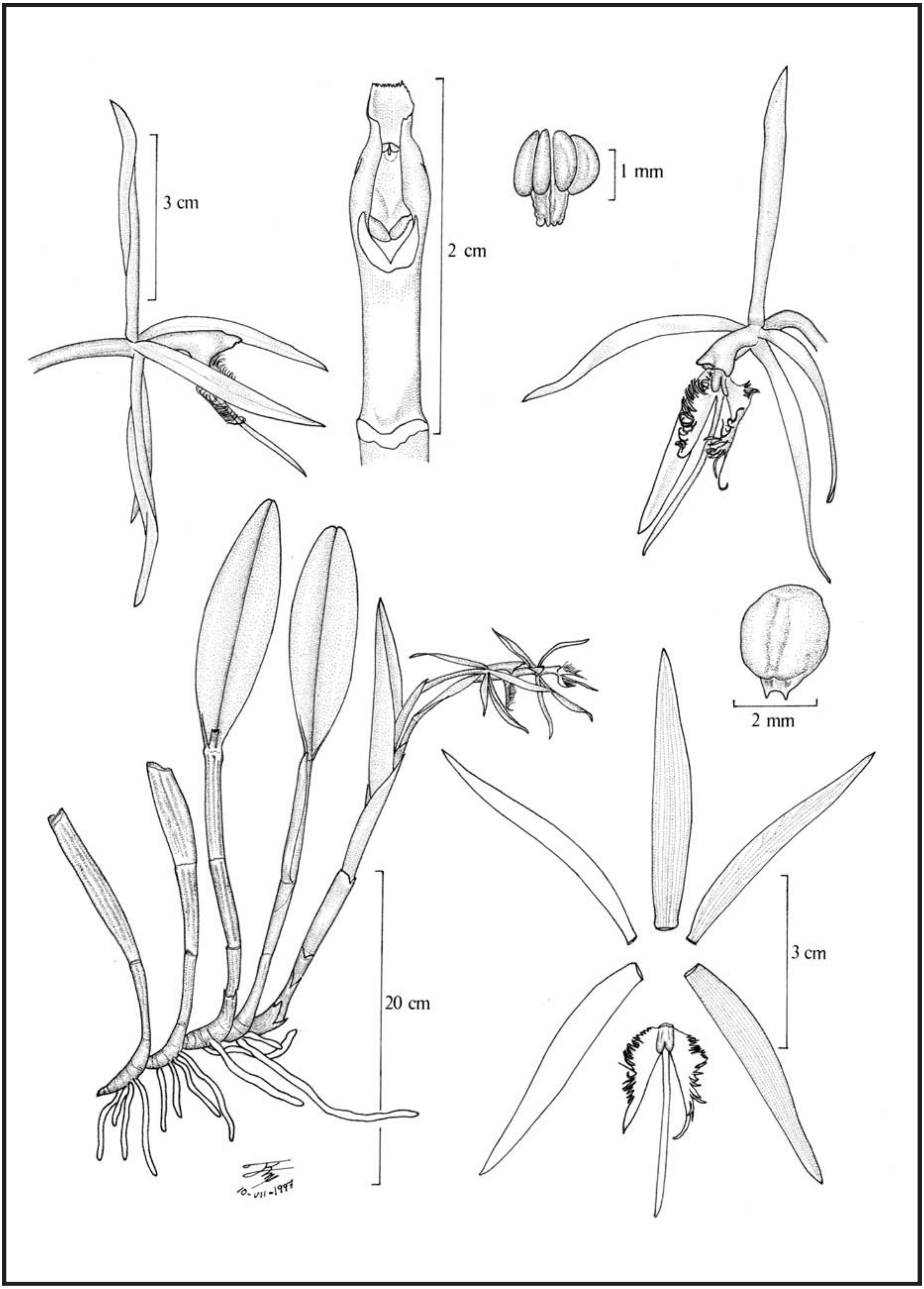
RECOGNITION: *Epidendrum chlorops* belongs to the Anceps Group, which is recognized by the simple stems, generally elongate, compound racemose inflorescence producing new successive racemes with time, fleshy flowers, filiform to narrowly spatulate petals, and the Polyanthum Subgroup which has elongate, not sub-corymbose racemes. The species is recognized by the terete, somewhat laterally compressed stems, green to ochre green-flowers turning yellowish with age, smooth ovary, 3-veined petals, 3-lobed lip, the lateral lobes sub-orbicular- elliptic, entire with evident basal thickened veins, the mid-lobe oblong-rectangular, slit. *Epidendrum clowesii* Bateman ex Lindley, which grows along the Pacific slope of southern Mexico (Oaxaca and Chiapas), Guatemala and El Salvador, has laterally compressed stems, smaller, olive-green flowers, sometimes tinged with brown, the lip greenish white without thickened veins, the sepals (8-9 mm long) and the lateral lobes of the lip without thickened veins. *Epidendrum motozintlensis* Hágsater & L.Sánchez, endemic of México, Chiapas, has laterally compressed stems, small green flowers with a greenish-white lip, 6.8-7.8 mm long sepals, filiform petals, and a short, transversely rectangular mid-lobe of the lip with a shallow apical sinus. *Epidendrum polyanthum* Lindley, from Mexico, Belize, Guatemala, El Salvador and Honduras has larger, orange-yellow flowers (sepals 8-10 mm long), the lateral lobes of the lip semi-ovate, with a small sinus in the margin, and the mid-lobe oblong-quadrate, with the apex emarginate



CONSERVATION STATUS: DD: Data deficient.

ETYMOLOGY: From the Greek χλωροκ, green, in reference to the color of the flowers.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM CILIARE L. **Plate 1317**

EPIDENDRUM CILIARE L., Syst. Nat. ed. 10, 2: 1246. 1759.

Helleborine graminea, foliis rigidis, carinatis, Plum., Nov. Pl. Amer. 9, 1703. Type: MARTINIQUE: ***Plumier s.n.*** Illustration. P, not seen. Lectotype: designated by Garay & Sweet 1974. Plumier in Burman, Pl. Amer., t. 179, fig. 2, 1758. *Auliza ciliaris* (L.) Salisb., Trans. Hort. Soc. London 1: 294. 1812.

Aulizeum ciliare (L.) Lindl ex Stein. Orchideenb 226. 1892. *Phaedrosanthus ciliaris* (L.) Kuntze. Lex. Gen. Phanerog. 429. 1904. *Coilostylis ciliaris* (L.) Withner & Harding, The Cattleyas and their relatives: The Debatable Epidendrums pg. 139. 2004.

Synonyms: *Epidendrum cuspidatum* Lodd., Bot. Cab. 1: t. 10. 1817. Type: DOMINICA: Received by Messrs. Loddiges, in 1808, from the island of Dominica, ***Loddiges s.n.*** No specimen made; the illustration in Bot. Cab. serves as the type, Ackerman (1995). *Epidendrum ciliare* L. var. *cuspidatum* (Lodd.) Lindl., Fol. Orchid. 2: 30, 1853. *Epidendrum luteum* Hort. ex Planch., Hort. Donat. 4: 165. 1858. *nom. illeg.* (based on *Epidendrum ciliare* L. var. *cuspidatum* (Lodd.) Lindl.)

Epidendrum viscidum Lindl., Edward's Bot. Reg. 26: misc. 81, 1840. Type: MÉXICO: imported by Messrs. ***Loddiges 373***. Holotype: K-Lindl.! *Epidendrum ciliare* L. var. *viscidum* (Lindl.) Lindl., Fol. Orchid. 2: 30. 1853.

Epidendrum cuspidatum var. *brachysepalum* Rchb. f., Linnaea 19: 372. 1847.

Coilostylis emarginata Raf., Fl. Tellur. 4: 37, 1878. Type: Without locality, Illustration in Botanical Magazine 13: t. 463. 1799. Designated by Christenson (2003) as Lectotype.

Epidendrum ciliare L. var. *minor* Hort. ex Stein, Orchideenb. 226. 1892.

Epidendrum nocturnum Jacq var. *guadeloupense* Chardard, Rev. Cyt. Biol. Vég. 26, 1-58. 1963. *nomen nudum*. *Sensu* Veyret 1982.

Epidendrum sanctalucianum H.G. Jones, Novosti Sist. Vyssh. Rast. 12: 140, 1975. Type: ST. LUCIA: Hort. Barbados, 1957, ***H. G. Jones E/87***. Holotype: HERB. JONESIANUM [not seen, herbarium apparently lost]. *Epidendrum santalucianum* H.G. Jones, in Icon. Orchid. Peruv. 1, pl. 41.1993, orthographic error.

Hierba epífita, raramente litófita, simpodial, subcespitosa, 22-68 cm de alto. **Raíces** basales, carnosas, gruesas, 1.5-3.5 mm de grosor. **Tallos** sencillos, engrosados formando un seudobulbo fusiforme, homoblástico, recto, 6.0-30 x 0.2-1.6 cm; cubiertos por 4-7 vainas papiráceas. **Hojas** 1-2 agregadas en el ápice del seudobulbo maduro, coriáceas, articuladas; lámina angostamente elíptica, ápice agudo, 7.5-36.0 x 2.0-7.0 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, producida del tallo inmaduro, raramente del seudobulbo maduro, racemosa, dística, 17-38 cm de largo; pedúnculo lateralmente comprimido; cubierto por 1-2 [3-6] brácteas, tubulares, oblongo triangular, agudas a acuminadas, 2.0-5.0 cm de largo; raquis terete, delgado, recto a ligeramente sinuoso. **Brácteas florales** de la mitad a dos tercios de la longitud del ovario, oblongo triangulares, conduplicadas, acuminadas, 2.0-5.0 cm de largo. **Ovario** terete, no inflado, no ornamentado, 30-70 x 0.18-0.25 mm. **Flores** 4-8, simultáneas, resupinadas, blancas, en ocasiones con el callo amarillo; fragancia intensa por la noche, a nardos, (*Polyanthes tuberosa* L.), persiste hasta el amanecer. **Sépalos** extendidos, libres, linear lanceolados, acuminados, 5-nervados, con numerosas venas secundarias dando la apariencia de ser 9-11 nervados, margen entero, revoluto, 45-65 x 4.0-7.0 mm; los **laterales** ligeramente oblicuos. **Pétalos** extendidos, arqueados hacia adentro, libres, lineares a angostamente ovados, acuminados, 3-nervados, con numerosas venas secundarias, dando la apariencia de ser 5-7 nervados, margen entero, extendido, 50-60 x 3-6 mm. **Labelo** unido a la columna, profundamente trilobado, base truncada a ligeramente cordada, 30-60 x 13-18 mm; bicalloso, los callos laminares, prominentes; lóbulos laterales semiovados, agudos, margen interno entero, margen externo profundamente laciniado a fimbriado, 17-25 x 4-7 mm; lóbulo medio linear, acuminado, margen entero, 32-45 x 1-2 mm. **Columna** recta a ligeramente arqueada, delgada, 12-23 mm de largo. **Clinandrio** prominente, dentado a fimbriado. **Antera** subesférica, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, más largas que los polinios, viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando un medio de la cavidad estigmática. **Nectario** profundo, penetrando casi la totalidad del ovario, no ornamentado. **Cápsula** elipsoide, cuerpo 7.0-8.0 x 1.2-1.7 cm, cuello de 14-16 mm de largo.

Epiphytic or rarely lithophytic, sympodial, sub-caespitose **herb. Roots** basal, fleshy, thick. **Stems** simple, thickened to form a fusiform, homoblastic, straight pseudobulb; covered by 4-7 papiraceous sheaths. **Leaves** 1-2 aggregate at the apex of the mature pseudobulb, coriaceous, articulate; blade narrowly elliptic, apex acute. **Inflorescence** apical, produced from the immature stem, rarely from the mature pseudobulb, racemose, distichous; peduncle laterally compressed, covered by 1-2[3-6] tubular, oblong-triangular, acute to acuminate bracts; rachis terete, thin, straight to slightly sinuous. **Floral bracts** from 1/2 to 2/3 the length of the ovary, conduplicate, oblong-triangular, acuminate. **Ovary** terete, not inflated, smooth, long. **Flowers** 4-8, simultaneous, resupinate, white, the calli occasionally yellow; fragrance intense, nocturnal, of tuberose (*Polyanthes tuberosa* L.), persistent till day-break. **Sepals** spreading, free, linear-lanceolate, acuminate, 5-veined with numerous secondary veins, thus appearing 9-11-veined, margin entire, revolute, the lateral sepals oblique. **Petals** spreading, arching forward, free, linear to narrowly ovate, acuminate, 3.veined, with numerous secondary veins, and appearing 5-7-veined, margin entire, spreading. **Lip** united to the column, deeply 3-lobed, base truncate to slightly cordate; bicallose, the calli laminar, prominent; lateral lobes semi-ovate, acute, inner margin entire, outer margin deeply laciniate to fimbriate; mid-lobe linear, acuminate, margin entire. **Column** straight to slightly arching, thin, long. **Clinandrium-hood** prominent, dentate to fimbriate. **Anther** sub-sphaerical, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose, longer than the pollinia, viscidium semi-liquid, transparent. **Rostellum** apical, slit. **Nectary** deep, penetrating nearly the whole ovary, smooth. **Capsule** ellipsoid, with a short pedicel.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Widely distributed from Mexico (Nayarit) to Peru and Brazil, including the Antilles. It is epiphytic or rarely lithophytic, generally in humid or wet forests, from sea level in mangroves or on rocks to 2000 m altitude. Flowering throughout the year.

RECOGNITION: *Epidendrum ciliare* belongs to the Coilostylis Group which is characterized by the sympodial, caespitose plants, the stems forming a fusiform, homoblastic pseudobulb, with an apical, racemose, distichous inflorescence, the peduncle covered by large bracts (but not spathaceous bracts), and flowers large, star-shaped, with long, narrow sepals and petals. The species is recognized by the fusiform pseudobulbs with 1-2 apical leaves, the inflorescence generally originates from the immature stem, rarely from the mature pseudobulb, the lip is deeply 3-lobed, and the outer margin of the lateral lobes deeply fimbriate to laciniate; the species is widespread from southern Mexico to Peru and Brazil. *Epidendrum megalemnum* Carnevali & G.A.Romero flowers from the mature stem and the base of the inflorescence is enveloped in 5-10 imbricating bracts, this species is sympatric with *E. ciliare,* and ranges from the lesser Antilles and northern South America. *Epidendrum cilioccidentale* Hágsater & L.Sánchez, from western Mexico (Sinaloa to Chiapas) is very similar to the latter, with numerous imbricating bracts, but the petals are narrow, as in *E. ciliare*. *Epidendrum x doroteae* P.H. Allen, apparently a natural hibrid between *Epidendrum nocturnum* Jacq. and *E. ciliare* produces the inflorescence from an immature stem, has larger flowers (sepals 70-90 mm long) and ovary (75-90 mm long), and the lateral lobes of the lip have a serrulate to slightly fimbriate margin. *Epidendrum oerstedii* Rchb.f. has shorter, thicker pseudobulbs, the inflorescence is produced from the young, immature stem, the outer margin of the lip is entire, and the mid-lobe is widened at the middle.



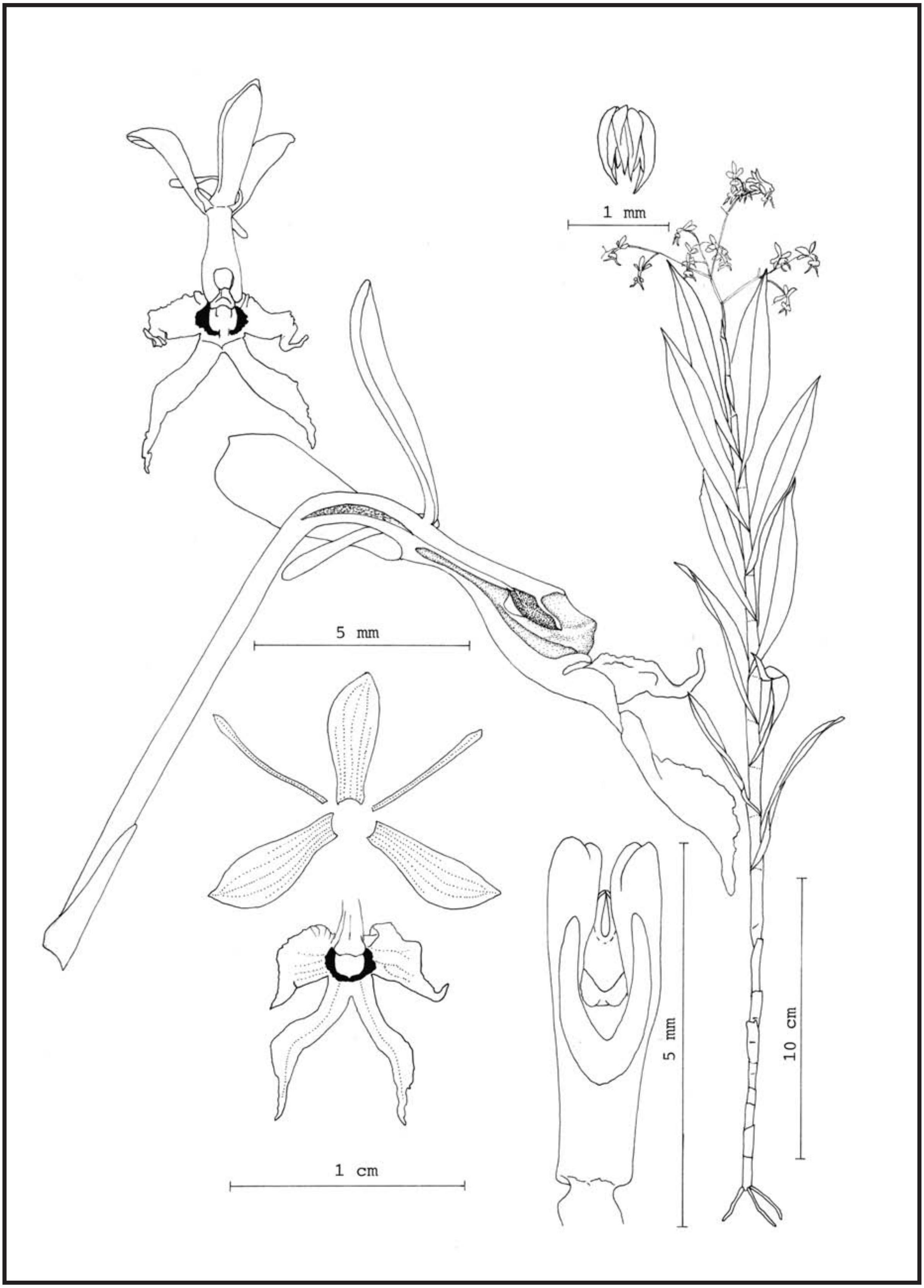
NOTE: There are at least two sister species, which with overlapping ranges, *E. megalemnum* in the Antilles and Venezuela, and *E. cilioccidentale* in western Mexico.

CONSERVATION STATUS: NT. Not Threatened. The species is widespread and common where it is found.

ETYMOLOGY: From the Latin "*cilium*" in reference to the deeply fimbriate-laciniate outer margin of the lateral lobes of the lip.

REFERENCES: Schultes, R.E. 1960, **Native Orchids of Trinidad and Tobago**, 100-103. Garay, L.A., & H.R. Sweet, 1974. **Flora of the Lesser Antilles**, pg. 128. Veyret, Y. 1982. Apomixie et variation chez *Epidendrum nocturnum* Jacq. (Orchidaceae). **Adansonia** 3-4: 190. Ackerman, J.D. 1995. **An Orchid Flora of Puerto Rico and the Virgin Islands**, pg. 62. Nir, M.A. 2000. **Orchidaceae Antillanae**, pg. 126. Carnevali, G., & I.M. Ramírez-Murillo, 2003. Epidendrum L. in J.A. Steyermark, P.E. Berry, K. Yatskievych & B. K. Holst, (eds.), **Flora of the Venezuelan Guyana**, 7: 335. Christenson, E.A. 2003. Typification de *Coilostylis* Rafinesque et nouveaux taxons de *Prosthechea*. **Richardiana** 3(3): 114-115. Withner, C.L. & P.A. Harding, 2004. The Genus *Coilostylis* in **The Cattleyas and their relatives: The Debatable Epidendrums**. 137-140.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM CIRRHOCHILUM F.Lehm. & Kraenzl. **Plate 1318**

EPIDENDRUM CIRRHOCHILUM F.Lehm. & Kraenzl., Bot. Jahrb. Syst. 26: 446. 1899.

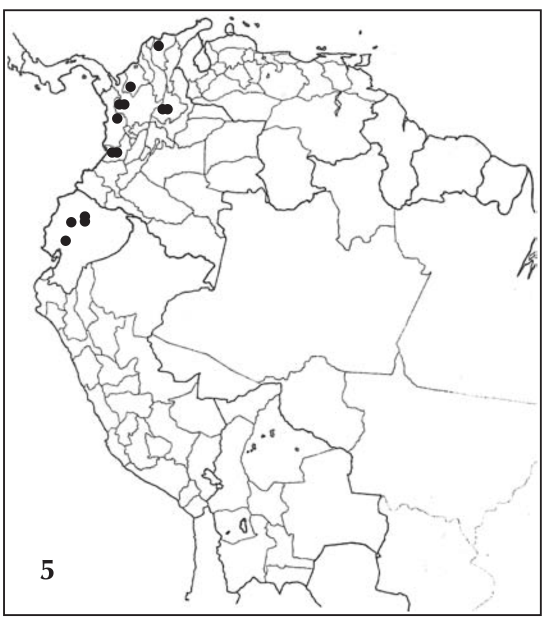
Type: ECUADOR: [Guayas:] circa Puente de Chimbo, at the foot of the Andes above Milagro, 200-600 m, blooms in June, ***F. C. Lehmann 6713.*** Holotype: K-L! Isotype: AMES!

Hierba epífita (o raramente terrestre), simpodial, cespitosa, 30-100 cm de alto. **Raíces** basales, delgadas, 1 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente aplanados, delgados, erectos, rectos, 16-55 x 0.3-0.6 cm; cubiertos en la base por vainas no foliares, algo infundibuliformes, fibrosas con el tiempo, 4.5-6 cm de largo. **Hojas** 10, distribuidas a lo largo del tallo, articuladas, alternas; vainas tubulares, finamente estriadas, 1.2-4 x 0.3-0.6 cm; lámina linear lanceolada a oblongo elíptica, acuminada, margen entero, 7-17 x 1.6-2.7 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, suberecta, paniculada, pauciflora, 20-45 cm de largo; pedúnculo lateralmente aplanado, corto, 4.5-9 cm de largo; en ocasiones con una bráctea prominente que lo cubre casi en su totalidad, tubular, largamente acuminada, 6.5 cm de largo; raquis ligeramente flexuoso, 15-30 cm de largo; con racimos extendidos, paucifloros, laxos, 7-20 cm de largo; cada uno con una bráctea basal angostamente triangular, acuminada, abrazadora, 1.2-5 cm de largo. **Brácteas florales** más cortas que el ovario, linear lanceoladas, acuminadas, abrazadoras, 2-8 mm de largo. **Ovario** terete, delgado, no inflado, no ornamentado, 15-18 mm de largo. **Flores** 50-200, sucesivas, resupinadas, sépalos, pétalos y base de la columna de color verde, mitad apical de la columna y labelo blanco con un semicírculo purpúreo en el disco; sin datos de fragancia. **Sépalos** reflexos, libres, linear espatulados, subagudos, ligeramente cóncavos, 5-nervados, margen entero, extendido, 6-7 x 1.5 mm. **Pétalos** reflexos, libres, filiformes, ápice redondeado, 1-nervados, margen entero, extendido, 6 x 0.4 mm. **Labelo** unido a la columna, 3-lobado, ligeramente cordado en la base, 5 x 10 mm; unicalloso, el ápice del callo incipientemente trilobulado; disco provisto de 3 quillas carnosas, agudas, paralelas (el par lateral más corto), todas desvaneciéndose antes de llegar al seno apical; lóbulos laterales oblicuamente triangulares, el ápice largamente acuminado, cirroso, el margen basal crenulado, 3-4 x 2-3 mm; lóbulo medio profundamente bilobado, 6.5-7 x 7 mm; cada lóbulo linear filiforme, largamente acuminado, comúnmente cirroso, 6.7 x 0.7 mm. **Columna** recta, delgada en la base y gradualmente más amplia hacia el ápice, con un par de dientes diminutos en el ápice, 5 mm de largo. **Clinandrio** corto, margen entero. **Antera** ovoide, 4-locular. **Polinios** 4, tipo "ala de pájaro", fuertemente comprimidos lateralmente, los interiores más pequeños; caudículas laminares, algo más cortas que los polinios. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** prominentes, de ½ del largo de la cavidad estigmática. **Nectario** corto, sin penetrar el ovario, no inflado, no ornamentado. **Cápsula** no vista.

Epiphytic (rarely terrestrial), sympodial, caespitose **herb. Roots** basal, thin. **Stems** simple, cane-like, laterally compressed, thin, erect, straight; the base covered by non-foliar sheaths, somewhat infundibuliform, becoming fibrous with age. **Leaves** 10, distributed throughout the stem, articulate, alternate; sheaths tubular, minutely striated; blade linear-lanceolate to oblong-elliptic, acuminate, margin entire. **Inflorescence** apical, sub-erect, paniculate, few-flowered; peduncle laterally compressed, short, occasionally with a prominent bract nearly totally covering it, tubular, long-acuminate; rachis slightly flexuous; racemes spreading, lax, few-flowered, each subtended by a narrowly triangular, acuminate, amplexicaul bract. **Floral bracts** much shorter than the ovary, linear-lanceolate, acuminate, amplexicaul. **Ovary** terete, thin, not inflated, smooth. **Flowers** 50-200, successive, resupinate, sepals, petals and base of the column green, apical of the column and lip white with a purple semi-circle surrounding the disc. **Sepals** reflexed, free, linear-spatulate, sub-acute, slightly concave, 5-veined, margin entire, spreading. **Petals** reflexed, free, filiform, apex rounded, 1-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base slightly cordate; callus entire, the apex slightly 3-lobed; disc provided with 3 fleshy, rounded, acute, parallel keels, the lateral ones shorter, all disappearing before reaching the apical sinus of the lip; lateral lobes obliquely triangular, apically long-acuminate, cirrhose, the basal margin crenulate; mid-lobe deeply bilobed; each lobe linear-filiform, long-acuminate, generally cirrhose. **Column** straight, base thin, gradually widened towards the apex, with a pair of minute teeth at the apex. **Clinandrium-hood** short, margin entire. **Anther** ovoid, 4-celled. **Pollinia** 4, "bird-wing" type, strongly laterally compressed, the inner pair smaller; caudicles laminar, somewhat shorter than the pollinia. **Rostellum** sub-apical, slit. **Nectary** short, without penetrating the ovary, not inflated, smooth.

OTHER SPECIMENS: COLOMBIA: Antioquia: Parque Nacional Natural "Las Orquídeas", Sector Venados, 890 m, 31 III 1988, *Cogollo 2846*, JAUM! MO! Parque Nacional Natural "Las Orquídeas", Sector Venados, 900 m, 7 VII 1988, *Cogollo 3368*, JAUM! MO! Murrí, La Blanquita, 950 m, 29 II 1992, *Gentry 75924*, MO! Mina de oro, cerca a Murrí cultivado por M. Robledo en La Ceja cerca de Medellín, 1700 m, pressed cult. 10 V 1989, *Posada sub Múnera 645*, AMO! **Bolivar: [Córdoba:]** Boca Antizales, on Río Esmeralda, 26 II 1918, *Pennell 4490*, AMES! NY! **Magdalena:** Parque Nacional de Santa Marta, Cuchilla de San Lorenzo, 18 VI 1969, *Díaz 140*, COL! **Santander:** Vicinity of Barranca Bermeja, between Sogamoso and Carare Rivers, 100-500 m, 22 VII 1936, *Haught 1941*, AMES! US! Ibid. 23 VII 1936, *Haught 1947*, US! **Valle del Cauca:** Carretera Vieja entre Cali y Buenaventura, 1000 m, 11 X 1982, *Escobar 2506*, HUA! Hidroeléctrica de Anchicayá, 600 m, pressed cult. 26 IV 1983, *Hágsater 7369*, AMO x4! QCNE! Ibid. pressed cult. 10 IX 1983, *Hágsater 7369*, AMO! (Illustration voucher). Hidroeléctrica de Anchicayá, pressed cult. 10 IX 1983, *Hágsater 7666*, AMO! **ECUADOR: Los Ríos:** Patricia Pilar, at 1 km El Centinela, 600 m, 4 X 1981, *Dodson 11598*, SEL! **Pichincha:** Dos Ríos, km 88 Quito-Santo Domingo, old road, 1200 m, 25 VIII 1980, *Dodson 7788a*, SEL! Dos Ríos, km 86, old road Quito-Santo Domingo, 1100 m, pressed cult. 27 I 1978, *Dodson 9338*, AMO! Ibid. pressed cult. 9 X 1978, *Dodson 9338*, AMO! Ibid. pressed cult. 10 VIII 1980, *Dodson 9338*, SEL! Dos Ríos, old road to Quito, pressed cult. 28 X 1982, *SEL sub Hágsater 6064*, AMO! QCNE! (illustration, AMO!) Ibid. 20 XII 1990, *SEL sub Hágsater 6064*, AMO! Ibid. 29 III 1992, *SEL sub Hágsater 6064*, AMO! road La Unión del Toachi-San Francisco de las Pampas, 1100-1200 m, 19 III 1985, *Harling 23165*, GB! QCA! Old Road Quito-Santo Domingo, SW of Chiriboga, ca. 1100 m, 8 VII 1979, *Løjtnant 15659*, AAU! Hills N of Alluriquín, 950 m, 21 IV 1977, *Madison 4095*, AMES! SEL! between Río Alluriquin and Río Toáchi, ca. 600 m, 14 III 1967, *Sparre 14818*, S!

OTHER RECORDS: COLOMBIA: Without locality, cult. by *Marta y Oscar Robledo s.n.*, published in Orquídeas Nativas de Colombia 2: 172, photo 184. 1991. **Antioquia:** Mina de oro, cerca a Murrí cultivado por M. Robledo en La Ceja cerca de Medellín, 1700 m, pressed cult. 10 V 1989, *Posada sub Múnera 645*, spirit, AMO! **Chocó:** Tutunendo, *Mejía Rosero s.n.*, digital image, AMO! **Valle del Cauca:** Hidroeléctrica de Anchicaya, 600 m, *Hágsater 7369*, spirit, AMO! **ECUADOR: Pichincha:** Mindo, Independencia, 700 m, *Hirtz 7513*, slide and spirit, AMO!



DISTRIBUTION AND ECOLOGY: Ranging along the Pacific slope of the Andes from northern Colombia to central Ecuador, as well as the lower basin of the Río Magdalena; epiphytic or rarely terrestrial in wet montane forests, at [100] 600-1200 m altitude. Flowering from June to April.

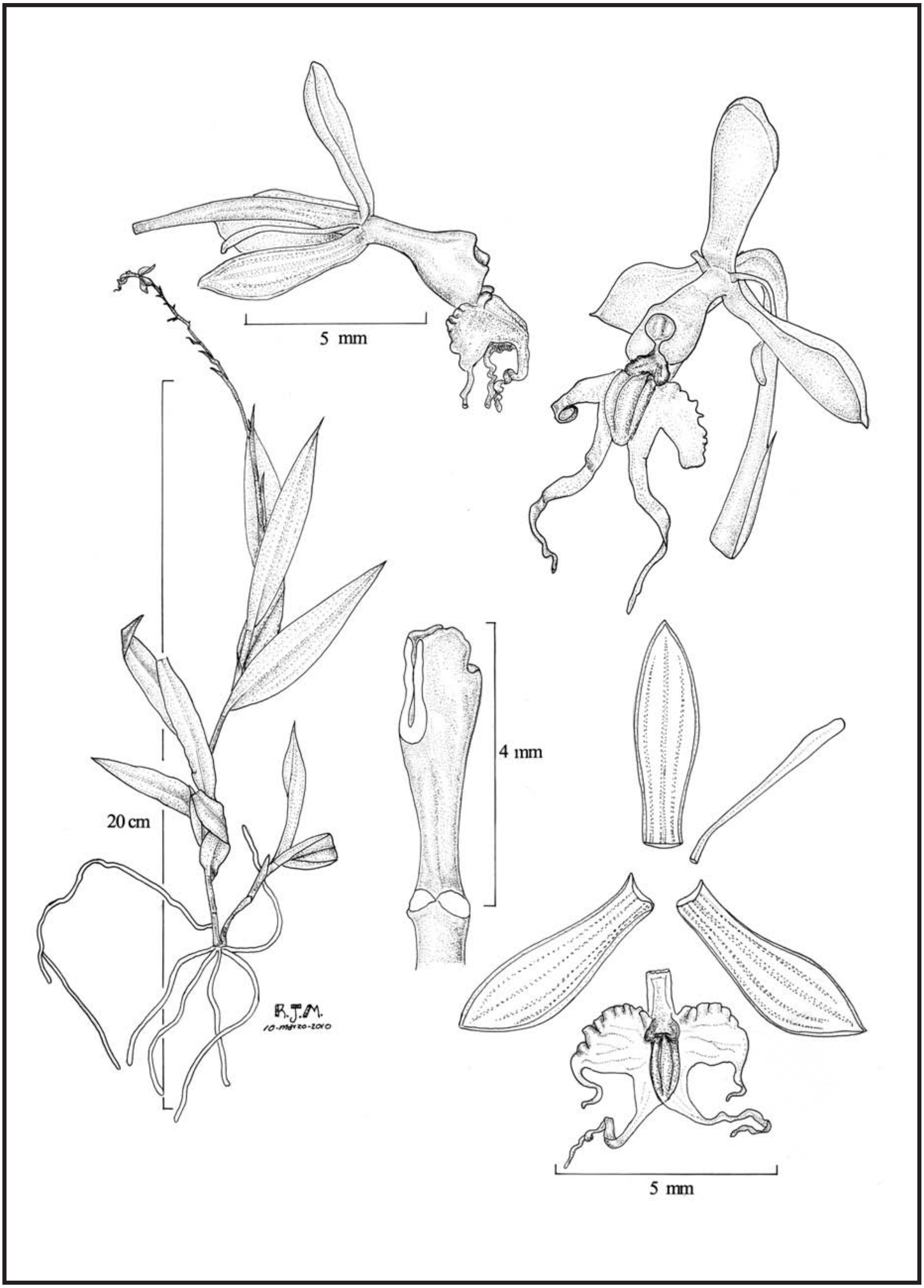
RECOGNITION: *Epidendrum cirrhochilum* belongs to the Pseudepidendrum Group which is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, usually apical inflorescence, the filiform petals and the lip usually 3-lobed (with 3 parallel fleshy keels), the apical lobe often bifurcate, the "bird-wing" type pollinia, and Paniculatum Subgroup, which has green and white flowers, often marked with purple on the disc of the lip and apex of the column. The species is recognized by the relatively small flowers, sepals 6-7 mm long, the single callus, and the long-acuminate cirrhose lobes of the lip, the disc surrounded by a purple semi-circle. *Epidendrum cirrochiloides* Hágsater & E.Santiago from Panama has elliptic leaves and larger flowers, sepals 11-12 mm long, and a bicallose lip, and also has the cirrhose lobes of the lip. *Epidendrum cirrhohirtzii* Hágsater & E.Santiago from Lita and Chical has smaller leaves, a few-flowered inflorescence, the flowers greenish with the lip and apical half of the column white, immaculate. *Epidendrum bispathulatum* Hágsater, O.Pérez & E.Santiago has larger flowers, sepals 12.5-14 mm long, a bicallose lip, the mid-lobe divided into a pair of linear-spatulate lobes, obliquely truncate at the apex, the apical margin erose.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *cirrhosus*, tendrilled, ending in a narrow curled or wavy appendage, and the Greek χειλος, lipped, in reference to the long-acuminate lobes of the lip.

REFERENCE: Escobar, R., 1991, **Orquídeas Nativas de Colombia** 2: 172, photo 184. Medellín, Colombia.

Authors: E. Santiago & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM CIRRHOHIRTZII Hágsater & E.Santiago **Plate 1319**

EPIDENDRUM CIRRHOHIRTZII Hágsater *et* E.Santiago, *sp. nov.*

Type: ECUADOR: Imbabura: along road from Ibarra to Lita in the general [area of] Guallupe, 600-1300 m, 1 November 1988, ***Alex Hirtz 3902***. Holotype: MO! (Illustration voucher).

Epidendro cirrhochilo F.Lehm. & Kraenzl. simile sed foliis brevioribus et angustioribus, floribus paucis luteo-viridibus, labello luteo immaculato, sepalis patentibus differt.

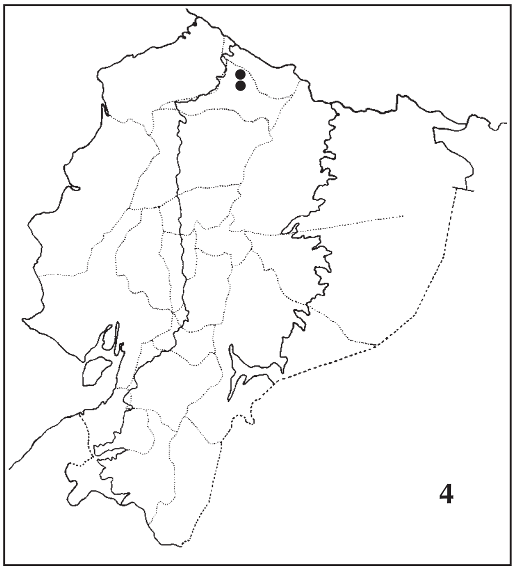
Hierba epífita, simpodial, cespitosa, 20-45 cm de alto. **Raíces** basales, muy delgadas, 0.5 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base y lateralmente aplanados hacia el ápice, delgados, erectos a ligeramente arqueados, 9-24 x 0.1-0.3 cm. **Hojas** 7-11, distribuidas a lo largo del tallo, articuladas, alternas, desiguales en tamaño (la basal más pequeña); vainas tubulares, finamente estriadas, 1-2.3 x 0.1-0.3 cm; lámina lanceolada, acuminada, margen entero, 2.5-8.5 x 0.6-1.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, erecta, racemosa a incipientemente paniculada, pauciflora, laxa, 11-19.5 cm de largo; pedúnculo subterete, erecto, 7.5-10 cm de largo; provisto de 3-5 brácteas tubulares acuminadas, progresivamente más pequeñas, 1.2-4 cm de largo; raquis delgado, recto, 4-10 cm de largo. **Brácteas florales** más cortas que el ovario, linear lanceoladas, acuminadas, abrazadoras, 1-15 mm de largo. **Ovario** terete, delgado, no inflado, no ornamentado, 6-18 mm de largo. **Flores** 6-25, simultaneas, resupinadas, inmaculadas, sépalos y pétalos amarillo verdosos, labelo amarillo, columna blanco amarillenta; sin datos de fragancia. **Sépalos** extendidos, libres, carnosos, oblanceolados, subagudos, cóncavos, 3-4-nervados, margen entero, extendido, 5-6 x 1.6-1.8 mm; los **laterales** ligeramente oblicuos. **Pétalos** reflexos, libres, filiformes, ápice redondeado, 1-nervados, margen entero, extendido, 4-5 x 0.4-0.5 mm. **Labelo** unido a la columna, 3-lobado, ligeramente cordado en la base, 3 x 4.6 mm; unicalloso, bilobado en el ápice; disco provisto de 3 quillas carnosas, agudas, paralelas todas alargadas hasta el seno apical; lóbulos laterales oblicuamente triangulares, margen basal crenulado y ondulado, esquina apical cirrosa, 1.5 x 2.3 mm; lóbulo medio con un istmo cuadrado en la base y profundamente bilobado en el ápice, 2 x 4.7 mm; cada lóbulo linear filiforme, largamente acuminado, comúnmente cirroso, 2 x 0.2 mm. **Columna** recta, delgada en la mitad basal y gradualmente más amplia hacia la mitad apical, con un par de dientes diminutos en el ápice, 4-5 mm de largo. **Clinandrio** corto, margen entero. **Antera** y **Polinios** no vistos. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** y **Nectario** no vistos. **Cápsula** elipsoide, con el perianto persistente, 3 cm de largo; pedicelo terete, delgado, 13-15 mm de largo; cuerpo 16 x 4 mm; cuello apical, 3-4 mm de largo.

Epiphytic, sympodial, caespitose **herb. Roots** basal, very thin. **Stems** simple, cane-like, terete towards the base, slightly laterally compressed towards the apex, thin, erect to slightly arching. **Leaves** 7-11, distributed throughout the stem, articulate, alternate, unequal in size (the lower ones smaller); sheaths tubular, minutely striated; blade lanceolate, acuminate, margin entire. **Inflorescence** apical, erect, racemose to paniculate, lax, few-flowered; peduncle sub-terete, erect, provided with 3-5 tubular, acuminate bracts progressively smaller; rachis thin, straight. **Floral bracts** shorter than the ovary, linea-lanceolate, acuminate, amplexicaul. **Ovary** terete, thin, not inflated, unornamented. **Flowers** 6-25, simultaneous, resupinate, immaculate, sepals and petals greenish yellow, margin entire, spreading; the lateral sepals slightly oblique. **Petals** reflexed, free, filiform, apex rounded, 1-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base slightly cordate; with a single callus, bilobed at the apex, prominent; disc provided with 3, fleshy, acute, parallel keels reaching the apical sinus; lateral lobes obliquely triangular, basal margin crenulate and undulate, forward corner cirrhose; mid-lobe with a square isthmus at the base and the deeply bilobed; each lone linear-filiform, long acuminate, commonly cirrhose. **Column** straight, basal half thin, thin, then gradually wider towards the apex, with a pair of minute teeth at the apex. **Clinandrium-hood** short, margin entire. **Rostellum** apical, slit. **Capsule** ellipsoid, perianth persistent; pedicle terete, thin, long, apical neck short.

OTHER SPECIMENS: ECUADOR: Carchí: environs of Chical, 12 km below Maldonado on the Rio San Juan, 1200 m, 28 V 1978, *Madison 4683*, AAU! F! QCA! SEL!

DISTRIBUTION AND ECOLOGY: Known only from north-western Ecuador, from the wet Pacific slope of the Andes, epiphytic at 600-1300 m altitude. Flowering from May to November. Expected across the border in Colombia.

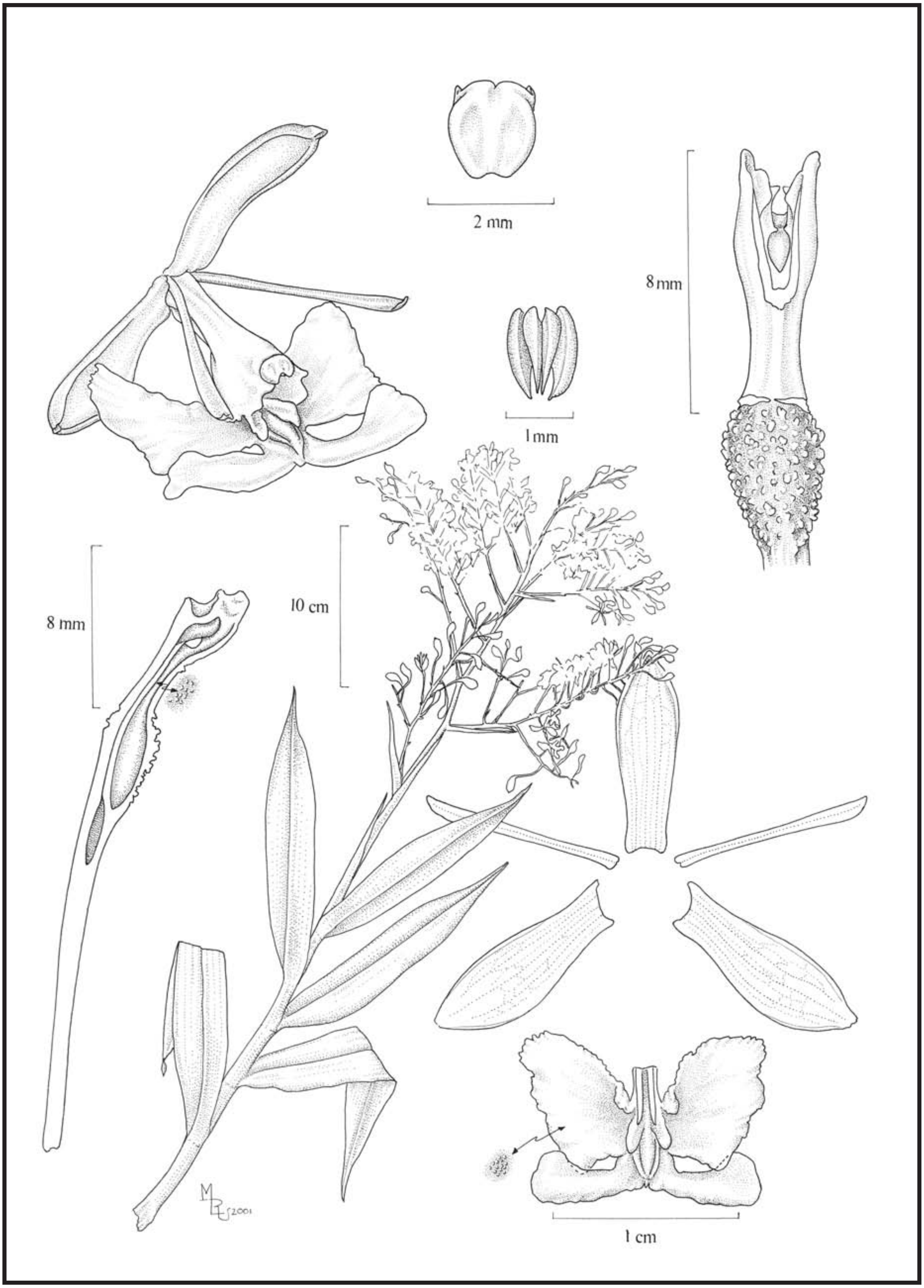
RECOGNITION: *Epidendrum cirrhohirtzii* belongs to the Pseudepidendrum Group which is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, usually apical inflorescence, the filiform petals and the lip usually 3-lobed (with 3 parallel fleshy keels), the apical lobe often bifurcate, the "bird-wing" type pollinia, and Paniculatum Subgroup, which has green and white flowers, often parked with purple on the disc of the lip and apex of the column. The species is recognized by the small, greenish yellow flowers, the lip and apical half of the column white, immaculate, with a single callus, bilobed at the apex. *Epidendrum cirrhochilum* F.Lehm. & Kraenzl. has a many flowered, paniculate inflorescence, the flowers also green and white, but with a circular purple mark surrounding the disc, and a single, broad callus. *Epidendrum cirrhochiloides* Hágsater & E.Santiago from Panama has elliptic leaves and larger flowers, sepals 11-12 mm long, a bicallose lip and similar cirrhose lobes of the lip, which is also marked with purple.



CONSERVATION STATUS: DD. Data deficient. Know up to now from two collections, but is probably also found in neighboring Colombia.

ETYMOLOGY: In honor of Alexander Hirtz, Ecuadorean geologist and serious amateur orchid collector and student, who collected the type, and the Latin *cirrhosus*, tendrilled, ending in a narrow curled or wavy appendage, in reference to the apex of the lobes of the lip.

Authors: E. Hágsater & E. Santiago   Illustrator: R. Jiménez M.   Editors: E. Hágsater & L. Sánchez S.



EPIDENDRUM CLARKII Hágsater & E.Santiago Plate 1320

EPIDENDRUM CLARKII Hágsater *et* E.Santiago, *sp. nov.*

Type: ECUADOR: Pichincha: Penetration road from Tandapi to Sarapullo km 5 to 15, 1500-1800 m, 2 March 1986, ***Calaway H. Dodson, Carlyle A. Luer, Alex Hirtz & Alvin Embree 16352.*** Holotype: MO 3577789! (Illustration voucher). Isotypes: MO 3538805! QCNE!

Epidendro nanegalense Hágsater & Dodson simile sed floribus succesivis, sepalis leviter reflexis, callis prominentibus, labelli lobulis basalibus falcato-trapezoidalibus et ovario ornato separabile.

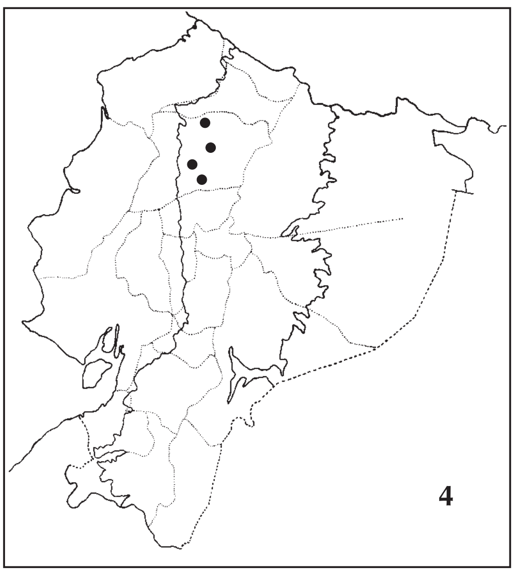
Hierba terrestre o raramente epífita, simpodial, cespitosa, 70-150 cm de alto. **Raíces** basales, delgadas, carnosas, blancas, 1-2 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base y lateralmente aplanados hacia el ápice, erectos, rectos, 50-120 x 0.4-1.0 cm; cubiertos en la mitad basal por vainas tubulares no foliares, escariosas y fibrosas con el tiempo, 2-3.5 cm de largo. **Hojas** 9-10, distribuidas en la mitad apical del tallo, dísticas, articuladas, erecto extendidas; vainas tubulares, finamente estriadas, 1.8-3 x 0.4-1.0 cm; lámina angostamente elíptica, cortamente acuminada, subcoriácea, margen entero, 9-18 x 2-3.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, paniculada, erecta, pluriflora, densa, 22-30 cm de largo; pedúnculo delgado, lateralmente aplanado, recto, 10 cm de largo; cubierto en su totalidad por 2 o 4 brácteas tubulares, algo ancipitosas, acuminadas, parcialmente imbricadas, 2.5-9 cm de largo; raquis con 5-10 racimos extendidos, multifloros, densos; cada uno de ellos con una bráctea basal angostamente triangular, acuminada, escariosa, 1-6 cm de largo. **Brácteas florales** mucho más cortas que el ovario, angostamente triangulares, largamente acuminadas, abrazadoras, 4-12 mm de largo. **Ovario** terete, delgado, inflado ventralmente justo detrás del perianto, en el 1/5 apical del ovario, formando una vesícula corta, muricada, 20-25 mm de largo. **Flores** 50-220, sucesivas, abriendo de la base al ápice de la inflorescencia, resupinadas, sépalos y pétalos lila rosado, el labelo blanquecino; sin datos de fragancia. **Sépalos** ligeramente reflexos, libres, algo carnosos, no ornamentados, obovado oblanceolados, obtusos, ligeramente cóncavos, 7-nervados, margen entero, 10.5-11 x 3.5-4 mm. **Pétalos** extendidos, libres, filiformes, redondeados, 1-nervados, margen entero, extendido, 10.5 x 0.5 mm. **Labelo** unido a la columna, 3-lobado, profundamente cordado en la base, extendido, con el ápice ligeramente dirigido hacia arriba, margen eroso crenado, 9 x 13 mm; bicalloso, los callos delgados, prominentes, alargados hasta la base del lóbulo medio; disco con 3 quillas paralelas, carnosas, todas desvaneciéndose antes de llegar al seno apical; lóbulos basales tan anchos como el apical, oblicuamente trapezoides, falcados, 6 x 8 mm; lóbulo apical bilobado, profundamente divaricado, 2.7 x 13 mm; cada lóbulo oblongo con el ápice ensanchado y redondeado, en contacto con los lóbulos basales, 2.7 x 6.5 mm. **Columna** delgada, recta, el ápice bidenticulado y con un par de alas laterales redondeadas, 8 mm de largo. **Clinandrio** reducido, margen entero. **Antera** obovoide, con el ápice ligeramente emarginado, 4-locular. **Polinios** 4, tipo "ala de pájaro", fuertemente comprimidos lateralmente, el par interior algo más pequeño. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** pequeños, de ½ del largo de la cavidad estigmática. **Nectario** penetrando 1/5 del ovario, ligeramente inflado, formando una vesícula corta, liso. **Cápsula** no vista.

Terrestrial or rarely epiphytic, sympodial, caespitose, tall **herb**. **Roots** basal, thin, fleshy, white. **Stems** simple, cane-like, terete towards the base, laterally compressed towards the apex, erect, straight; the lower half covered by tubular, non-foliar, scarious sheaths, becoming fibrous with time. **Leaves** 9-10, distributed along the upper half of the stem, distichous, articulate, erect-spreading; sheaths tubular, minutely striated; blade, narrowly elliptic, short-acuminate, sub-coriaceous, margin entire. **Inflorescence** apical, paniculate, erect, densely many-flowered; peduncle thin, laterally compressed, straight; totally covered by 2-4 tubular bracts, somewhat ancipitose, acuminate, partly imbricating; rachis with 5-10, densely many-flowered, spreading racemes, each subtended by a narrowly triangular, acuminate, amplexicaul bract. **Ovary** terete, thin, ventrally inflated just behind the perianth, along the apical 1/5th of the ovary, forming a short, muricate vesicle. **Flowers** 50-220, successive, opening from the base towards the apex of the inflorescence; resupinate, sepals and petals lilac-rose, the lip whitish. **Sepals** slightly reflexed, free, somewhat fleshy, un-ornamented, obovate-oblanceolate, obtuse, slightly concave, 7-veined, margin entire. **Petals** somewhat spreading, free, filiform, rounded, 1-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base deeply cordate, spreading, the apex slightly upturned, margin erose-crenate; bicallose, the calli thin, prominent, elongate to the base of the mid-lobe; disc with 3 parallel, fleshy keels, all disappearing before the apical sinus; with at the basal lobes as wide as between the apical lobes; lateral lobes obliquely trapezoid, falcate; mid-lobe bilobed, deeply divaricate; each lobes oblong with the apex widened and rounded, touching the corner of the lateral lobes. **Column** thin, straight, apex bidenticulate, with a pair of rounded lateral wings. **Clinandrium-hood** reduced, margin entire. **Anther** obovoid, the apex slightly emarginate, 4-celled. **Pollinia** 4, "bird wing" type, strongly laterally compressed, the inner pair somewhat smaller. **Rostellum** sub-apical, slit. **Nectary** penetrating 1/5th of the ovary, slightly inflated, forming a short vesicle, smooth.

OTHER SPECIMENS: ECUADOR: Without locality, *Jameson s.n.*, W-R 9327! **Imbabura:** Reserva "Los Cedros", 1600 m, 16 II 1999, *Endara 210*, QCA! **Pichincha:** La Playa, ca. 5 km W of Mindo via the Lloa to Mindo, 1100 m, 12 II 1997, *Clark 3925*, QCNE! Carretera Antigua Nono-Tandayapa-Los Bancos, 2300 m, 20 II 2000, *Suin 541*, QCNE!

OTHER RECORDS: ECUADOR: Pichincha: Quito to Nanegalito, ca. 2500 m, *Newman s.n.*, digital imagen, AMO!

DISTRIBUTION AND ECOLOGY: Endemic to the western slopes of the Andes in central Ecuador, terrestrial or rarely epiphytic, at 1100-2300 m altitude. Flowering in February and March.

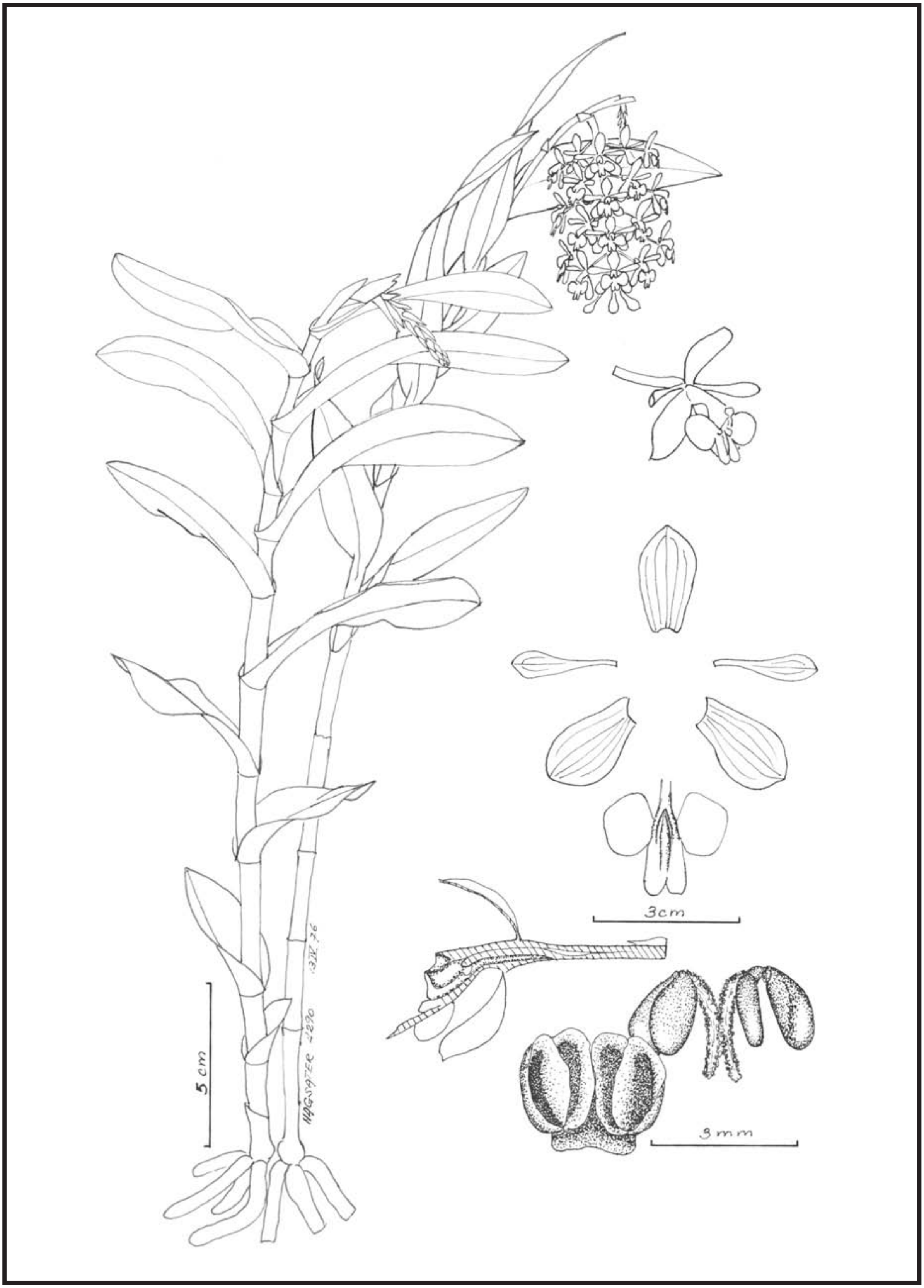

4

RECOGNITION: *Epidendrum clarkii* belongs to the Pseudepidendrum Group is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, apical inflorescence, lacking a spathaceous bract, the petals filiform and the lip usually 3-lobed, with 3 parallel fleshy keels, the apical lobe often bifurcate, and the pollinia "bird-wing" type and Porphyreum Subgroup which has flowers colored reddish orange, deep purple or lilac-pink, the calli generally prominent, sometimes horn-like. The species is recognized by the successive, pink-lilac flowers with the disc whitish, sepals 10-5-11 mm long, the apical 1/5th of the ovary ventrally inflated and muricate, the lip with lateral lobes falcate-trapezoid, and the prominent calli. It is very close to *Epidendrum nanegalense* which has simultaneous, purple flowers with the ovary inflated but smooth, the lateral lobes of the lip dolabriform, not falcate, and the calli small and short. *Epidendrum porphyreum* Lindl. has similarly colored flowers but somewhat larger, sepals 13-15 mm long, dorsally verrucose, the ovary is not inflated and the lateral lobes of the lip are dolabriform, not falcate. *Epidendrum englerianum* F.Lehm. & Kraenzl. has short plants, to 50 cm tall, simultaneous, purple/pink to greenish/white flowers, sepals 10-13 mm long, the ovary thin, and the lateral lobes fo the lip falcate-oblong. *Epidendrum ionodesme* Schltr. has similar flowers, but the ovary is not inflated, and the mid-lobe of the lip has a deep sinus and the two apical lobes are slightly divaricate, with the width of the lip similar at the apex as at the base.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of John Littner Clark, who collected in Ecuador in 1995-8, and collected one of the specimens seen. He is currently at the University of Alabama and specializes in Gesneriaceae.

Authors: E. Hágsater & E. Santiago **Illustrator: M. López R.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM CLOWESII Bateman ex Lindl. **Plate 1321**

EPIDENDRUM CLOWESII Bateman ex Lindl., Bot. Reg. 30: misc. p. 16. 1844.

Type: GUATEMALA: ***Bateman s.n.***. Holotype: K-L. Tracing from of type: AMES 24116! W-R 5808!

Synonyms: Epidendrum flavovirens Rchb.f., Beitr. Orch. Centr.-Am. 85. 1866. Type: GUATEMALA: Las Nubes, ***Wendland 321***. Holotype: W-R 50171! (Illustration) Tracing from the type by R. Schlechter: AMES 24118! AMES 24119! Non *Epidendrum flavovirens* Regel (1856).

Epidendrum viridifuscatum De Wild., Chron. Orchidéenne. 2(5): 35. 1905. Type: GUATEMALA: ***M. J. Van de Putte***. Non *Epidendrum viridifuscatum* Cogn. (1898).

Epidendrum piestocaulos Schltr., Repert. Spec. Nov. Regni Veg. Beih. 15: 207. 1918. Type: Guatemala: Las Cruces, Costa Grande, ***Bernoulli & Cairo 648***. Holotype: B (destroyed). Lectotype (here designated): tracing from the type: AMES!

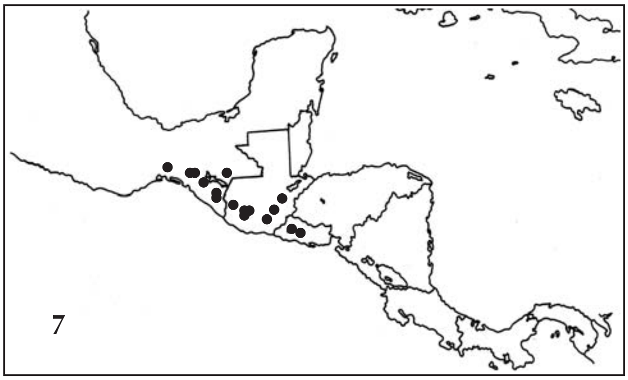
Hierba epífita, simpodial, cespitosa, erecta, 35-60 cm de alto o más, incluyendo la inflorescencia. **Raíces** basales, carnosas, gruesas, 2-3 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente aplanados, rectos, 29-50 x 0.25-0.60 cm. **Hojas** 7-15, dísticas, distribuidas en los dos tercios apicales del tallo; vaina foliar, tubular, algo lateralmente comprimida, papiráceas cuando viejas y después de haber perdido el limbo, 1.5-4 cm de largo; lámina angostamente elíptico lanceolada, cortamente acuminada, mucronada, ligeramente carinada, subcoriáceas, margen entero, extendido, 7-15 x 1-2.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, pluriracemosa, densa, 7-20 cm de largo, puede florecer de los nudos de la inflorescencia primaria en años posteriores, formando racimos compuestos; pedúnculo 4-7 cm de largo, cubierto por 2-5 brácteas imbricadas, tubulares, oblongo triangulares, acuminadas, 2-4 cm de largo; raquis terete, liso. **Brácteas florales** generalmente más cortas que el ovario, las basales casi del mismo largo del ovario, progresivamente más cortas hacia el ápice, ovado triangulares, agudas, 1.2-8.0 mm de largo. **Ovario** terete, liso a verrugoso, 4-9 x 0.3-0.6 mm. **Flores** 15-45, por racimo, simultáneas, resupinadas, verde olivo, en ocasiones con sépalos y pétalos teñidos de café, labelo blanquecino verdoso; fragancia herbácea, ligera. **Sépalos** extendidos, libres, glabros, elíptico obovados, obtusos, 5-nervados, margen entero, extendido, 8-9 x 2.7-3.0 mm; los **laterales** oblicuos, 3.8-4.2 mm de ancho. **Pétalos** entreabiertos, libres, glabros, linear a angostamente espatulados, obtusos, 1-3 nervados, margen entero, extendido, 8.0-8.5 x 1-1.3 mm. **Labelo** unido a la columna, trilobado, base cordada, carnoso, 6.0-7.5 x 7-10 mm; bicalloso, los callos laminares, prominentes, carnosos, los cuales se prolongan en dos carnias poco evidentes; el disco con una carina central prominente, carnosa, la cual se prolonga hasta el seno del lóbulo medio; lóbulos laterales suborbicular elípticos, enteros a raramente algo ondulados, 2-3 x 2.5-3.5 mm; lóbulo medio oblongo rectangular, el margen entero, ápice hendido, formando dos lóbulos redondeados, enteros, 3.0-3.5 x 2-2.5 mm. **Columna** recta, obcónica, delgada en la base, 4-5 mm de largo. **Clinandrio** reducido, margen entero. **Antera** obovoide, 4-locular. **Polinios** 4, angostamente obovoides, lateralmente comprimidos; caudículas suaves y granulosas, de longitud similar a ligeramente más largas que la de los polinios; viscidio viscoso, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de 1/2 de la longitud de la cavidad estigmática. **Nectario** corto, penetrando 1/5 del ovario, liso. **Cápsula** no vista.

Epiphytic, sympodial, caespitose, erect **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, laterally compressed, straight. **Leaves** 7-15, distichous, distributed throughout the apical 2/3 of the stems; sheaths tubular, somewhat laterally compressed, papiraceous when old, after loosing the blade; blade narrowly lanceolate-elliptic, short acuminate, mucronate, aristate, slightly carinate, subcoriaceous, margin entire, spreading. **Inflorescence** apical, pluri-racemose, dense, producing additional racemes from the nodes of the peduncle in successive years; peduncle somewhat elongate, covered by 2-5 imbricating, tubular, oblong-triangular, acute to acuminate bracts; rachis terete, smooth. **Floral bracts** generally shorter than the ovary, the basal ones as long as the ovary, then progressively shorter, ovate-triangular, acute. **Ovary** terete, smooth to verrucose. **Flowers** 15-45 per raceme, simultaneous, resupinate, olive-green, the sepals and petals occasionally tinged with brown, lip greenish white; fragrance slight, herbaceous. **Sepals** spreading, free, glabrous, obovate-elliptic, obtuse, 5-veined, margin entire, spreading, the lateral sepals oblique. **Petals** partly spreading, free, glabrous, linear to narrowly spatulate, obtuse, 1-3-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base cordate; bicallose, the calli laminar, prominent, fleshy, prolonged into two low keels; disc of the lip with a prominent central, fleshy, low keel that reaches the apical sinus; lateral lobes sub-orbicular-elliptic, entire to rarely somewhat undulate; mid-lobe oblong-rectangular, the margin entire, apex slit, forming two rounded, entire lobes. **Column** straight, obconical, thin at the base. **Clinandrium-hood** reduced, margin entire. **Anther** obovoid, 4-celled. **Pollinia** 4, narrowly obovoid, laterally compressed; caudicles soft and granulose, as long or slightly longer than the pollinia; viscidium viscous, transparent. **Rostellum** apical, slit. **Nectary** short, penetrating 1/5th of the ovary, smooth.

OTHER SPECIMENS: See appendix.

DISTRIBUTION AND ECOLOGY: Ranging from Mexico (Oaxaca and Chaipas), to Guatemala and El Salvador. Epiphytic at 750-2150 m altitude. Flowering from October through March.

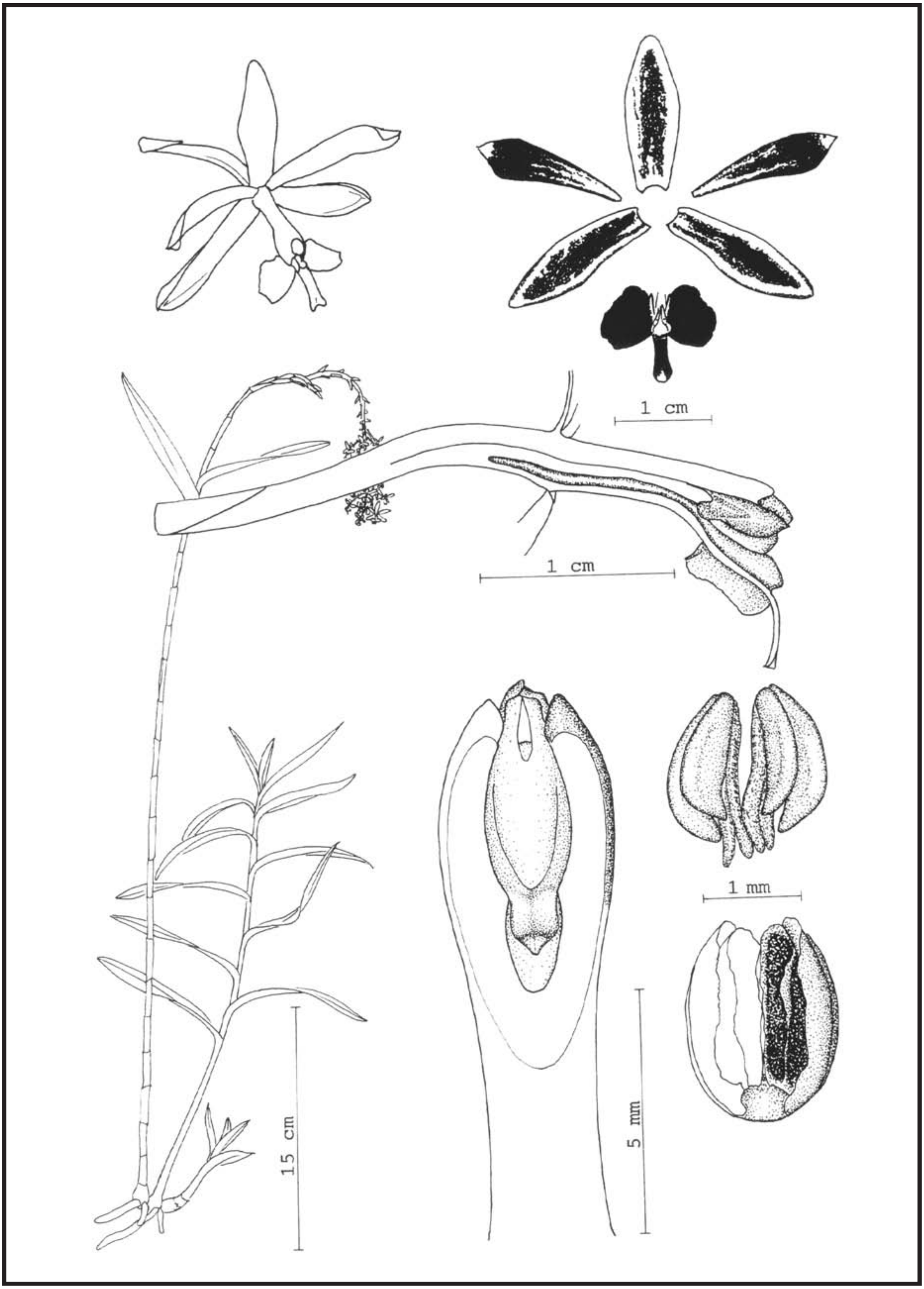
RECOGNITION: *Epidendrum clowesii* belongs to the Anceps Group, which is recognized by the simple stems, generally elongate, compound racemose inflorescence producing new successive racemes with time, fleshy flowers, filiform to narrowly spatulate petals, and the Polyanthum Subgroup which has elongate, not sub-corymbose racemes. The species is recognized by the laterally compressed stems, a smooth to verrucose ovary, olive-green flowers, the sepals sometimes tinged with brown, and the lip greenish white, sepals 8-9 mm long, glabrous, petals 1-3 veined, the lateral lobes of the lip sub-orbicular to elliptic, the margins entire to rarely somewhat undulate, mid-lobe oblong-rectangular, apex slit. *Epidendrum chlorops* Schltr., endemic to Mexico, grows along the Pacific slope in Sinaloa, Nayarit, Colima, Michoacán, México, Guerrero and Oaxaca, has larger flowers (sepals and petals 10-15.5 mm long), it has evident basal veins on the lateral lobes of the lip. The highly localized *Epidendrum motozintlensis* Hágsater & L. Sánchez has smaller flowers (sepals and petals (6.8-7.8 mm long), piliform petals, and the mid-lobe of the lip is short, transversely rectangular, with an apical sinus. The taller, more widespread *Epidendrum polyanthum* Lindl. is known from Mexico, Belize, Guatemala, El Salvador and Honduras; it has terete stems, an elongate inflorescence, orange-yellow flowers, the lateral lobes of the lip semi-ovate, with a small sinus in the margin, and the mid-lobe is oblong-quadrate, with the apex emarginate.



CONSERVATION STATUS: DD: Data deficient.

ETYMOLOGY: In honor of Rev. John Clowes, of Lancashire, England, (1777-1846), who possessed one of the finest private orchid collections of the time at Broughton, near Manchester.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM CNEMIDOPHORUM Lindl. **Plate 1322**

EPIDENDRUM CNEMIDOPHORUM Lindl., Folia Orch. Epidendrum: 53. 1853.

Type: GUATEMALA: [Quetzaltenango:] 16 August 1854, ***G. Ure Skinner [45]***. Holotype: K-L! (sketch of plant with pendant inflorescence and flowers W-R 5806!) Isotype: K-L! (photo: AMES 24121! Sketch W-R 4795!) W-R 4725! (tracing by B. Ames: AMES!)

Synonyms: *Epidendrum macrobotryum* Lindl. ex Rchb.f., Bonpl. 4: 327. 1856. Type: GUATEMALA, 16 August 1854, ***G. Ure Skinner*** (*Lindl. sub no.* ***45***), Holotype: K-L (the same type as for *E. cnemidophorum*; Lindley had used the name as a provisional name on the type sheet, which Reichenbach later published, disregarding Lindley's earlier publication.) Isotype: W-R 4725! (tracing by B. Ames: AMES!)

Epidendrum affine Rchb.f., Bonpl. 4: 327. 1856. Type: GUATEMALA, ***G. Ure Skinner*** (*Lindl. sub no.* ***50***), Holotype: K-L! (Sketch W-R 5811! photo AMES 24120!) (published together with *E. macrobotryum*, Reichenbach states it is close to this species, differentiates them by the shape of the lateral lobes of the lip.) Isotypes: AMES 73161! W-R 4533! *Encyclia affinis* (Rchb.f.) Schltr., Beih. Bot. Centralbl. 36(2): 471. 1918. Non *Epidendrum affine* Focke (=*Encyclia oncidioides* (Lindl.) Schltr.), nec *Epidendrum affine* A. Rich. (=*Encyclia fucata* (Lindl.) Britt. & Millsp.) [Schlechter probably miss-cited the basionym when he made the transfer to *Encyclia affinis* as both A. Richard's and Focke's are encyclias but not Reichenbach's species.]

Hierba epífita o litófita, simpodial, cespitosa, [50-60]100-180 cm de alto (o más). **Raíces** basales, carnosas, 1.3-3.5 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base y algo lateralmente aplanados cerca del ápice, erectos, rectos, 46-140 x 0.35-1 cm; cubiertos en el 1/3 basal por vainas tubulares, no foliares, fibrosas con el tiempo, 30-40 mm de largo. **Hojas** 13-18, distribuidas en los 2/3 apicales del tallo, articuladas, dísticas; vainas tubulares, finamente estriadas, 8-50 mm de largo; lámina angostamente elíptica a elíptica, aguda, diminutamente apiculada, coriácea, margen entero, extendido, 10-22.5 x 1-5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, plurianual, originando los racimos sucesivos a partir un mismo pedúnculo, arqueado-nutante, generalmente multiflora, densa, 13-40 cm de largo; pedúnculo 6-22 cm de largo; oculto en su totalidad por 5-11 brácteas, prominentes, oblongo lanceoladas, con el ápice redondeado, conduplicadas e imbricadas, de color verdoso, 5-10 cm de largo; raquis recto. **Brácteas florales** mucho más cortas que el ovario, ovado-triangulares, agudas, abrazadoras, 4-11 mm de largo. **Ovario** terete, delgado, algo dilatado detrás del perianto, no ornamentado, de color verdoso a ligeramente rosado, 37-70 mm de largo. **Flores** 10-40, sucesivas, aunque llegan a estar abiertas en su totalidad de manera simultánea, resupinadas, carnosas, sépalos y pétalos de color rosado en la superficie dorsal (inmaculados), ventralmente amarillo pálido a verde amarillento con manchas irregulares pardas a púrpura rojizas [también han sido vistas formas con los sépalos y pétalos café oscuro casi en su totalidad, el margen amarillo*], columna y labelo rosado-magenta con blanco; aroma agradable. **Sépalos** extendidos a ligeramente reflexos, libres, oblongos, obtusos, 5-nervados, los márgenes enteros, extendidos, [15]19-22 x 5-8 mm; los **laterales** levemente oblicuos. **Pétalos** extendidos a ligeramente reflexos, libres, espatulados, redondeados, 3-nervados, margen entero, extendido, [14]19-20 x 3-5 mm. **Labelo** unido a la columna, trilobado, cordado en la base, 10-13 x 11-12 mm; bicalloso, los callos prominentes, laminares, lateralmente aplanados; disco tricarinado, la carina central carnosa, delgada, alargada hasta el ápice de la lámina; lóbulos laterales dolabriformes, margen crenulado, 5-7 x 6.5-8 mm; lóbulo medio obcuneado a linear oblongo, el ápice generalmente cortamente bilobado, con los lóbulos semicirculares y redondeados, algo divaricados, margen entero, 7 x 5 mm. **Columna** recta, delgada, 14-15 mm de largo. **Clinandrio** reducido (la antera expuesta en su totalidad), margen entero. **Antera** ovoide, 4-locular. **Polinios** 4, semiovoides, alargados, lateralmente fuertemente comprimidos, desiguales en tamaño (el par interior más corto), caudículas suaves y lisas, ligeramente más largas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** pequeños. **Nectario** apenas penetrando el ovario, no inflado, no ornamentado. **Cápsula** angostamente elipsoide; pedicelo terete, delgado, 17 mm de largo; cuerpo 35 x 12 mm; cuello apical 20 mm de largo.

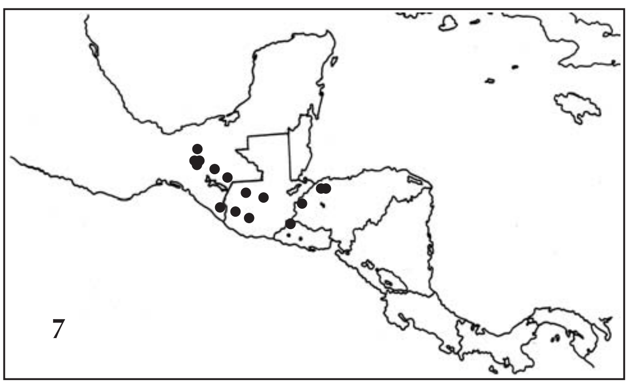
Epiphytic or lithophytic, sympodial, caespitose, tall **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, terete at the base, somewhat laterally compressed at the apex, erect, straight; the basal 1/3 covered by tubular, non-foliaceous sheaths becoming fibrous with time. **Leaves** 13-18, distributed throughout the apical 2/3 of the stem, articulate, distichous; sheaths tubular, minutely striated; blade narrowly elliptic, acute, minutely apiculate, coriaceous, margin entire, spreading. **Inflorescence** apical, racemose, pluri-annual, the successive racemes produced from the same peduncle, arching-nutant, densely many-flowered; peduncle totally hidden by 5-11 prominent, oblong-lanceolate, rounded, conduplicate, imbricating bracts, green; rachis straight. **Floral bracts** much shorter than the ovary, ovate-triangular, acute. **Ovary** terete, thin, somewhat dilated behind the perianth, smooth, greenish to somewhat rose-colored. **Flowers** 10-40, successive, thought they may all be open at one time, resupinate, fleshy, sepals and petals dorsally rose-colored, immaculate, ventrally pale yellow to yellowish green with irregular brown to reddish purple spots [dark chocolate brown sepals and petals with the margin yellow also seen*], column and lip magenta-rose and white; fragrance agreeable. **Sepals** spreading to slightly reflexed, free, oblong, obtuse, 5-veined, the margins entire, spreading, the lateral sepals slightly oblique. **Petals** spreading to slightly reflexed, free, spatulate, rounded, 3-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base cordate; bicallose, the calli prominent, laminar, laterally compressed; disc 3-keeled, the central keel fleshy, thin, reaching the apex of the lip; lateral lobes dolabriform, margin crenulate; mid-lobe obcuneate to linear-oblong, the apex generally short-bilobed, the lobes semi-circular and rounded, somewhat divaricate, margin entire. **Column** straight, thin. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, 4-celled. **Pollinia** 4, semi-ovoid, elongate, acute, laterally strongly compressed but not ancipitose nor transparent; caudicles soft and smooth, slightly longer than the pollinia. **Rostellum** apical, slit. **Nectary** barely penetrating the ovary, not inflated, smooth. **Capsule** narrowly ellipsoid, with a long pedicel and apical neck.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Ranging from the Mesa Central de Chiapas, Mexico, through the Sierra de los Chuchumatanes and Sierra de Chama in Guatemala, and from the Volcán Tacaná in Chiapas through Guatemala to the Cerro Montecristo in El Salvador and the Sierra del Merendón in Honduras; Epiphytic or lithophytic, growing at 1300-2600 m altitude. Flowering from December to May, August. Van der Pijl and Dodson (1966) report pollination by humming-birds (Amazalia tzacatl).

RECOGNITION: *Epidendrum cnemidophorum* belongs to the Cristatum Group which is characterized by the sympodial, caespitose habit, many-leaved stems, apical racemose inflorescence with several large, imbricating bracts, and producing successive racemes over the years from the peduncle, and the Cnemidophorum Subgroup, with pink-purple or yellow to yellowish green flowers, the lip with the margin of the lateral lobes entire. The species is recognized by the rounded bracts of the peduncle of the inflorescence, the dorsal surface of the sepals and petals rose, the inner side greenish yellow with irregular brown to reddish purple spots, the mid-lobe short bilobed, the lobes small, circular. *Epidendrum pfavii* Rolfe is vegetatively very similar but the bracts of the peduncle are acuminate, and the flowers evenly magenta-rose, with a clearly defined white blotch on the disc of the lip, the mid-lobe forms a pair of rectangular lobes apically truncate. *Epidendrum tziscaoënse* Hágsater has pale green flowers with reddish brown spots on the sepals and petals, the lip and column white slightly tinged purple on the sides of the anther and around the disc of the lip, the mid-lobe is narrowly elliptic, acute, not bilobed.

***NOTE:** Specimens from Oxchuc, Chiapas (*Hágsater 4305*, *Lamas s.n.* and Sarmiento, (2000) p. 107) have deep, chocolate brown sepals and petals, with the margin greenish and the mid-lobe of the lip generally truncate or slightly bilobed.



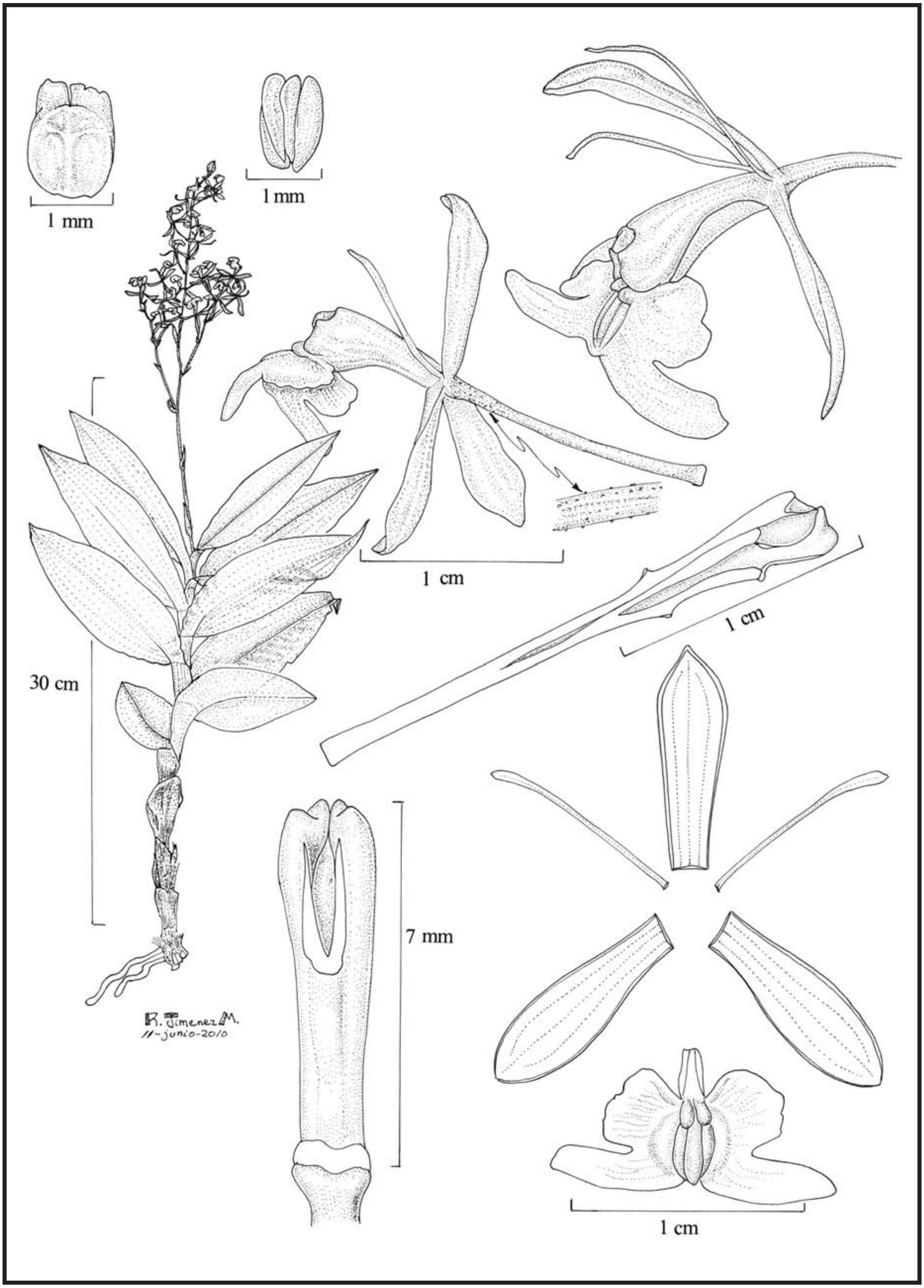
CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: from the Greek κνιμις, stocking and φορος, supporting, or like greaves, the armour of the calf of legs in antiquity, in reference to the bracts that protect the base of the inflorescence.

REFERENCES: Ames, O., 1923, *New or Noteworthy Orchids*, **Schedul. Orchid. 3: 13.** Ames, O., and D. S. Correll, 1952, Orchids of Guatemala. **Fieldiana Botany:** 26: 321. Ames, O., F.T. Hubbard, and C. Schweinfurth, 1936, **The Genus Epidendrum in the United States and Middle America:** p. 78. Bateman, J., 1867, *Epidendrum cnemidophorum*, **Bot. Mag.** 93: t. 5656. Hamer, F., 1985, **Icon. Pl. Trop.** 13: pl. 1216. Hamer, F., 1981, **Las Orquídeas de El Salvador** 3: 96, The Marie Selby Botanical Gardens, Sarasota, Florida. U.S.A. Sarmiento, F. M., & C. Romero G., 2000, **Orquídeas Mexicanas,** Banco Nacional de Obras y Servicios Públicos, México, D.F. p.107. Soto, M., *et al.*, 2007, **Orchids of Mexico**, Digital Catalogue: fig. 0315, México, Instituto Chinoín. Van der Pijl, L. & Calaway H. Dodson, 1966, **Orchid Flowers-Their Pollination and Evolution,** Univ. Miami Press, pg. 185.

Authors: E. Santiago & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM CRASSINERVIUM Kraenzl. **Plate 1323**

EPIDENDRUM CRASSINERVIUM Kraenzl., Repert. Spec. Nov. Regni Veg. 12(1): 182. 1906.
Type: BOLIVIA: [Tarija:] Chiquiacá, 1000 m, 31 January 1904, ***K. Fiebrig 2682***. Holotype: K-L! Isotype: BM! G (photo AMES! SEL!) L! LY x2!

Hierba epífita, simpodial, cespitosa, de 45-60 cm de alto. **Raíces** basales, carnosas, delgadas, blancas, 2 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente aplanados, 25-60 x 0.5-1.2 cm. **Hojas** 9-10, distribuidas a lo largo del tallo, articuladas, dísticas, desiguales en tamaño y forma (las basales más pequeñas); vaina tubular, finamente estriada, 0.5-8 x 0.5-1.2 cm; láminas apicales oblongo lanceoladas, cortamente acuminadas; láminas basales ovado-elípticas, agudas, margen entero, extendido, 4-20 x 1.8-4 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, paniculada, florece una sola vez, pluriflora, subdensa, 15-21 cm de largo; pedúnculo lateralmente aplanado, 3.5-8 cm de largo; provisto de 2 brácteas tubulares, conduplicadas, ancipitosas, acuminadas; raquis con 3-5 racimos paucifloros, subparalelos al raquis, 5-13 cm de largo; cada uno de ellos con una bráctea basal angostamente triangular, largamente acuminada, abrasadora, 0.7-2 cm de largo. **Brácteas florales** mucho más cortas que el ovario, angostamente triangulares, acuminadas, abrazadoras, ca. 2-8 mm de largo. **Ovario** terete, delgado, no inflado, escasa y cortamente piloso, 8-15 mm de largo. **Flores** hasta 70, simultáneas, resupinadas, de color blanco tornándose amarillentas; sin datos de fragancia. **Sépalos** extendidos a ligeramente reflexos, libres, oblanceolados, agudos, [3]7-nervados, las nervaduras evidentes, margen entero, extendido, 9-10 x 2-2.5 mm. **Pétalos** extendidos a ligeramente reflexos, libres, filiformes, algo más anchos en el ápice, redondeados, 1-nervados, margen entero, extendido, 9-10 x 0.7 mm. **Labelo** unido a la columna, convexo, de forma general trapezoide, trilobado, cordado en la base, 3-5 x 6.5-11 mm; bicalloso, los callos pequeños, subglobosos; disco provisto de 3 quillas intercallosas, alargadas hasta el seno apical; lóbulos laterales rectangulares, margen irregular, 2-3 x 3-3.5 mm; lóbulo medio emarginado, formando un par de lóbulos oblongos, fuertemente divaricados, con el ápice redondeado, margen entero; cada lóbulo de 3.2-5.5 x 2-3 mm. **Columna** recta, delgada en la base y dilatada en el ápice, 7 mm de largo. **Clinandrio** reducido, margen entero. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** pequeños. **Antera** ovoide, truncada, 4-locular. **Polinios** 4, tipo ala de pájaro. **Nectario** poco profundo, apenas penetrando el perianto, no inflado. **Cápsula** elipsoide, con el perianto persistente; pedicelo 10 mm de largo; cuerpo 2.5 x 1.1 cm; cuello apical 8-9 mm de largo.

Epiphytic, sympodial, caespitose **herb**. **Roots** basal, fleshy, thin, white. **Stems** cane-like, laterally compressed. **Leaves** 9-10, distributed throughout the stem, articulate, distichous, unequal in size and shape, basal leaves smaller; sheath tubular, minutely striated; blade oblong-lanceolate, short-acuminate, margin entire, spreading. **Inflorescence** apical, paniculate, the racemes sub-erect, flowering only once; many-flowered, sub-dense; peduncle laterally compressed; provided with 2, conduplicate, tubular bracts, ancipitose, acuminate, amplexicaul. **Floral bracts** much shorter than the ovary, narrowly triangular, acuminate, amplexicaul. **Ovary** terete, thin, not inflated, scarcely short-pilose. **Flowers** up to 70, simultaneous, resupinate, white, turning yellowish. **Sepals** spreading, reflexed, free, oblanceolate, acute, 7-veined, the veins prominently thickened, margin entire, spreading; the lateral sepals slightly oblique. **Petals** spreading to slightly reflexed, free, filiform, somewhat wider towards the apex, rounded, 1-veined, margin entire, spreading. **Lip** united to the column, convex, trapezoid in general outline, base cordate; bicallose, the calli small, sub-globose; disc provided with 3 thickened keels, elongate to the apical sinus; lateral lobes rectangular, margin entire; mid-lobe emarginate, forming a pair of strongly divaricate, oblong lobes apex rounded, margin entire; the lip wider between the apical lobes than between the lateral lobes. **Column** straight, thin at the base, dilated towards the apex. **Clinandrium-hood** reduced, margin entire. **Rostellum** apical, slit. **Anther** ovoid, 4-celled. **Pollinia** 4, "bird-wing type". **Nectary** shallow, barely penetrating the perianth, not inflated. **Capsule** ellipsoid, perianth persistent, with a thin pedicel and apical neck.

OTHER SPECIMENS: ARGENTINA: Salta: camino de Lipeo al Parque Nacional de Baritú, 1050 m, 17 IX 1991, *Guaglianone 2698*, F! NY! La Maroma, 23 I 1945, *Pierotti 65*, AMES! NY! UC! Orán, Maroma, 1100 m, 8 V 1945, *Pierotti 1383*, AMES! NY! S! **BOLIVIA: Tarija:** Arce, 29.2 km S of Emboroza-Sidras road to Bermejo, 600 m, 21-23 IV 1983, *Solomon 9921*, MO! NY! N of Sidras, 900-1000 m, 25 IV 1983, *Solomon 10104*, MO! (Illustration voucher) SEL!



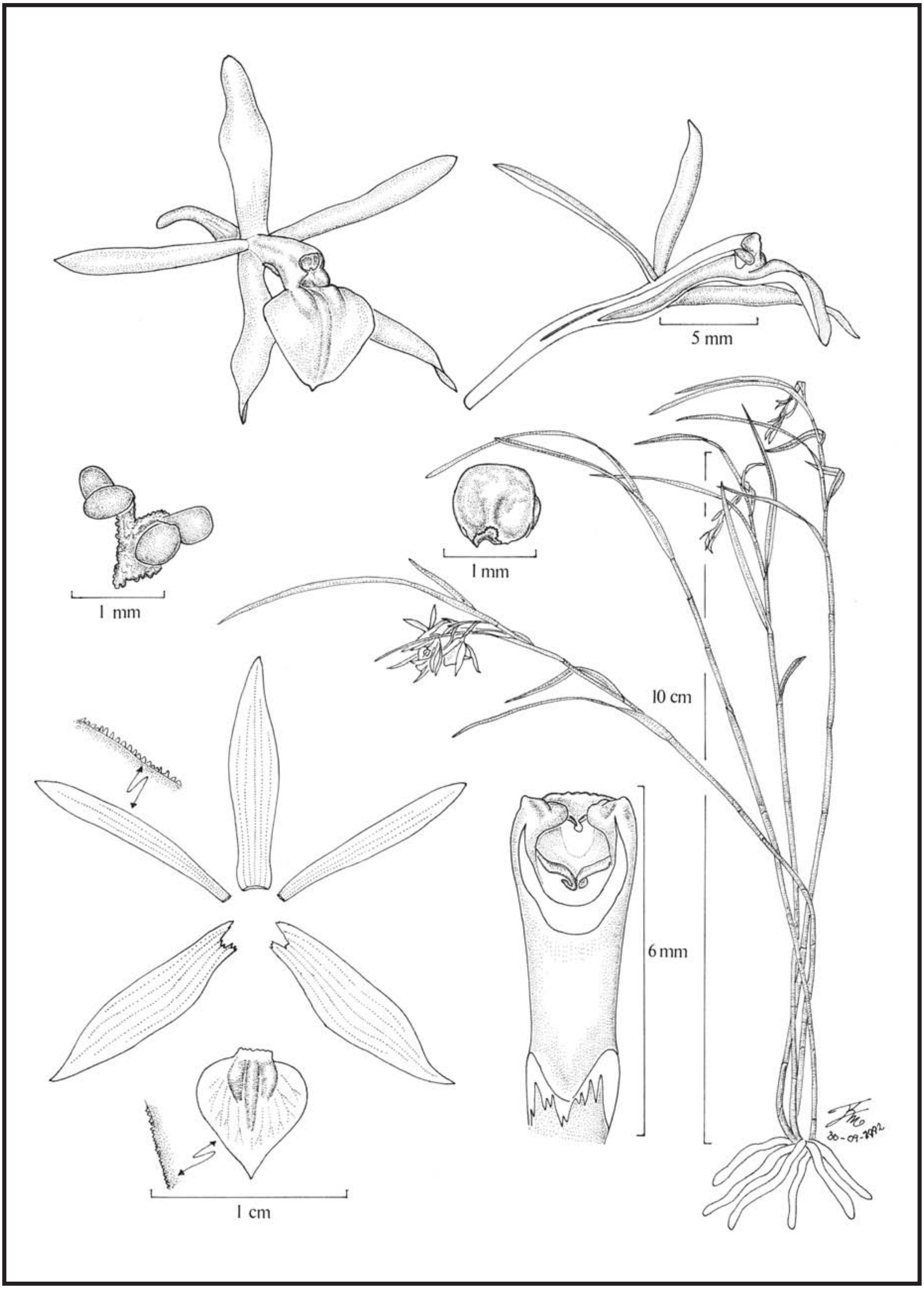
DISTRIBUTION AND ECOLOGY: Known from southern Bolivia, in the province of Tarija, and adjacent Argentina, in the Parque Nacional de Baritú, Salta, epiphytic at 600-1100 m altitude. Flowering from October to May.

RECOGNITION: *Epidendrum crassinervium* belongs to the Pseudepidendrum Group is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, apical inflorescence, lacking a spathaceous bract, the petals filiform and the lip usually 3-lobed, with 3 parallel fleshy keels, the apical lobe often bifurcate, and the pollinia "bird-wing" type and Paniculatum Subgroup which has green and white flowers, often parked with purple on the disc of the lip and apex of the column. The species is recognized by the sub-erect racemes of the paniculate inflorescence with respect to the rachis, the white, glabrous flowers turning yellowish with age, ovary scarcely short-pilose, and the mid-lobe of the lip strongly divaricate, wider than between the lateral lobes. *Epidendrum floribundum* Kunth has the racemes of the paniculate inflorescence spreading with respect to the rachis, green flowers with a white lip, and an unornamented ovary. *Epidendrum humidicolum* Schltr. has the base of the lip truncate, is only slightly wider between the apical lobes than between lateral lobes, and the margin of the lateral lobes is irregular, the ovary unornamented.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *crassus*, thick, and *nervius*, veined, thus thickly veined, in reference to the seven thickened veins of the sepals when dry, characteristic of this species.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM CULMIFORME Schltr. **Plate 1324**

EPIDENDRUM CULMIFORME Schltr., Repert. Sp. Nov. Regni Veg. 10: 485. 1912.

Type: GUATEMALA: [Alta Verapaz]: Pansamalá, c. 4000 Fuss ü. d. M., ***H. von Türckheim 804.*** Holotype: B, destroyed, (tracing at AMES 24112!) Isotypes: AMES 5790! BR! US (x2)!

Hierba epífita, simpodial, cespitosa, erecta, 11-40 cm de alto. **Raíces** basales, delgadas, blancas, 1.0-2.2 mm de grosor. **Tallos** sencillos, tipo caña, teretes, muy delgados, erectos, rectos, 8-35 x ca. 0.1-0.2 cm; cubiertos en la mitad basal por vainas (no foliosas) tubulares, escariosas, 15-55 mm de largo. **Hojas** 2-10, distribuidas en la mitad apical del tallo, suberectas, gramíneas, articuladas, dísticas; vaina tubular, finamente estriada, 6-42 x ca. 1-2 mm; lámina linear, acuminada, subcoriácea, flexible, margen entero, extendida, 3.5-13 x 0.1-0.3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, arqueada, pauciflora, siempre más corta que la hoja apical, 2.5-4 cm de largo; pedúnculo terete, delgado, 9-20 mm de largo; generalmente provisto en la parte media de 1 bráctea linear lanceolada, largamente acuminada, abrazadora, 6-12 mm de largo. **Brácteas florales** de tamaño variable, las basales ligeramente más largas que el ovario, las apicales más cortas que este, linear lanceoladas, largamente acuminadas, abrazadoras, 3-16 mm de largo. **Flores** 4-12, simultáneas, abriendo del ápice hacia la base de la inflorescencia, resupinadas, rosado cobrizas a pardo verdosas, el ápice de la columna rosado; sin fragancia. **Ovario** terete, delgado, algo dilatado en el 1/3 apical, no ornamentado, 10-12 mm de largo. **Sépalos** extendidos, libres, oblanceolados, agudos, apiculados, 5-nervados, margen entero, revoluto, 8-12 x 2.5-3.0 mm; los **laterales** oblicuos. **Pétalos** extendidos, libres, linear oblanceolados, obtusos, 3-nervados, margen diminutamente papiloso, revoluto, 9-11 x 1.4-1.6 mm. **Labelo** unido a la columna, entero, ovado cordiforme, base truncada, ápice agudo, margen diminutamente papiloso, extendido, 5.0-6.0 x 4.5-5.5 mm; bicalloso, los callos muy prominentes, carnosos; disco unicarinado, la carina delgada, intercallosa, alargada hasta la parte media de la lamina. **Columna** corta, recta, delgada, 5-6 mm de largo. **Clinandrio** prominente (aunque sin sobrepasar el ápice de la columna), margen denticulado. **Antera** reniforme, 4-locular. **Polinios** 4, obovoides; caudículas suaves y granulosas, ligeramente más largas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando ½ de la cavidad estigmática. **Nectario** penetrando ½ del ovario, no inflado, no ornamentado. **Cápsula** no vista.

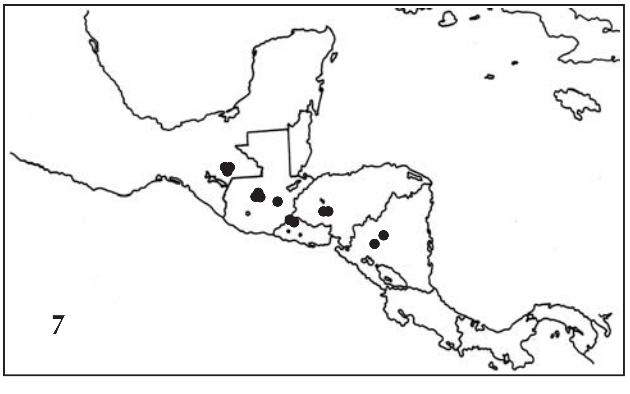
Epiphytic, sympodial, caespitose, erect **herb. Roots** basal, thin, white. **Stems** simple, cane-like, terete, very thin, erect, straight; the basal half covered by no foliar, tubular, scarious sheaths. **Leaves** 2-10, distributed along the apical half of the stem, sub-erect, grass-like, articulate, distichous; sheath tubular, scarious; blade linear, acuminate, sub-coriaceous, flexible, margin entire, spreading. **Inflorescence** apical, flowering only once, racemose, arching, few-flowered, always shorter than the apical leaf; peduncle terete, thin, generally provided in the middle with a single, linear-lanceolate, long-acuminate bract. **Floral bracts** variable in size, the basal ones slightly longer than the ovary, the apical ones shorter, linear-lanceolate, long-acuminate. **Flowers** 4-12, simultaneous, opening from the apex of the inflorescence towards the base, resupinate, copper-pink to greenish brown, apex of the column pink, without odor. **Ovary** terete, thin, somewhat dilated along the apical 1/3, smooth. **Sepals** spreading, free, oblanceolate, acute, apiculate, 5-veined, margin entire, revolute; the lateral sepals oblique. **Petals** spreading, free, linear-oblanceolate, obtuse, 3-veined, margin minutely papillose, revolute. **Lip** united to the column, entire, ovate-cordiform, base truncate, apex acute, margin minutely papillose, spreading; bicallose, the calli prominent, fleshy; disc one-keeled, the keel thin, reaching the middle of the lip. **Column** short, straight, thin. **Clinandrium-hood** prominent, without surpassing the body of the column, denticulate. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid; caudicles soft and granulose, slightly longer than the pollinia. **Rostellum** apical, slit. **Nectary** penetrating ½ the ovary, not inflated, smooth.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Ranging from central Chiapas, Mexico through the Sierra de las Minas in Guatemala, El Salvador, Honduras and northern Nicaragua, epiphytic, growing at 1000-2500 m, mainly at 1800 m altitude. Flowering from July to February.

RECOGNITION: *Epidendrum culmiforme* belongs to the Chloe Group which is characterized by the sympodial, caespitose plants with simple, very thin stems, grass-like, acuminate, sub-erect leaves, a racemose, lax, few-flowered inflorescence, and delicate flowers with a more or less cordate lip. The species is recognized relativel tall plants, to 40 cm, pink-copper to greenish brown colored flowers, sepals 8-12 mm long, entire, ovate-cordiform lip 5-6 mm long. *Epidendrum chloe* Rchb.f. has shorter plants, to 30 cm tall, copper colored flowers with a greenish lip, and the apex of the column pink, sepals 11-13 mm long, and a somewhat 3-lobed lip with hemi-elliptic lateral lobes. *Epidendrum wendtii* Hágsater & Salazar has taller plants, to 67 cm high, large, greenish to orange-cream-colored flowers, sepals 15-23 mm long, and the entire, ovate-triangular lip, 7.5-11.6 mm long.

NOTE: Many authors have considered *E. culmiforme* as a synonym of *E. chloe*, but we have found conspicuous differences in all the specimens, so we consider them as distinct species with different distribution ranges, flowering times and clear differences in the shape of the lip.



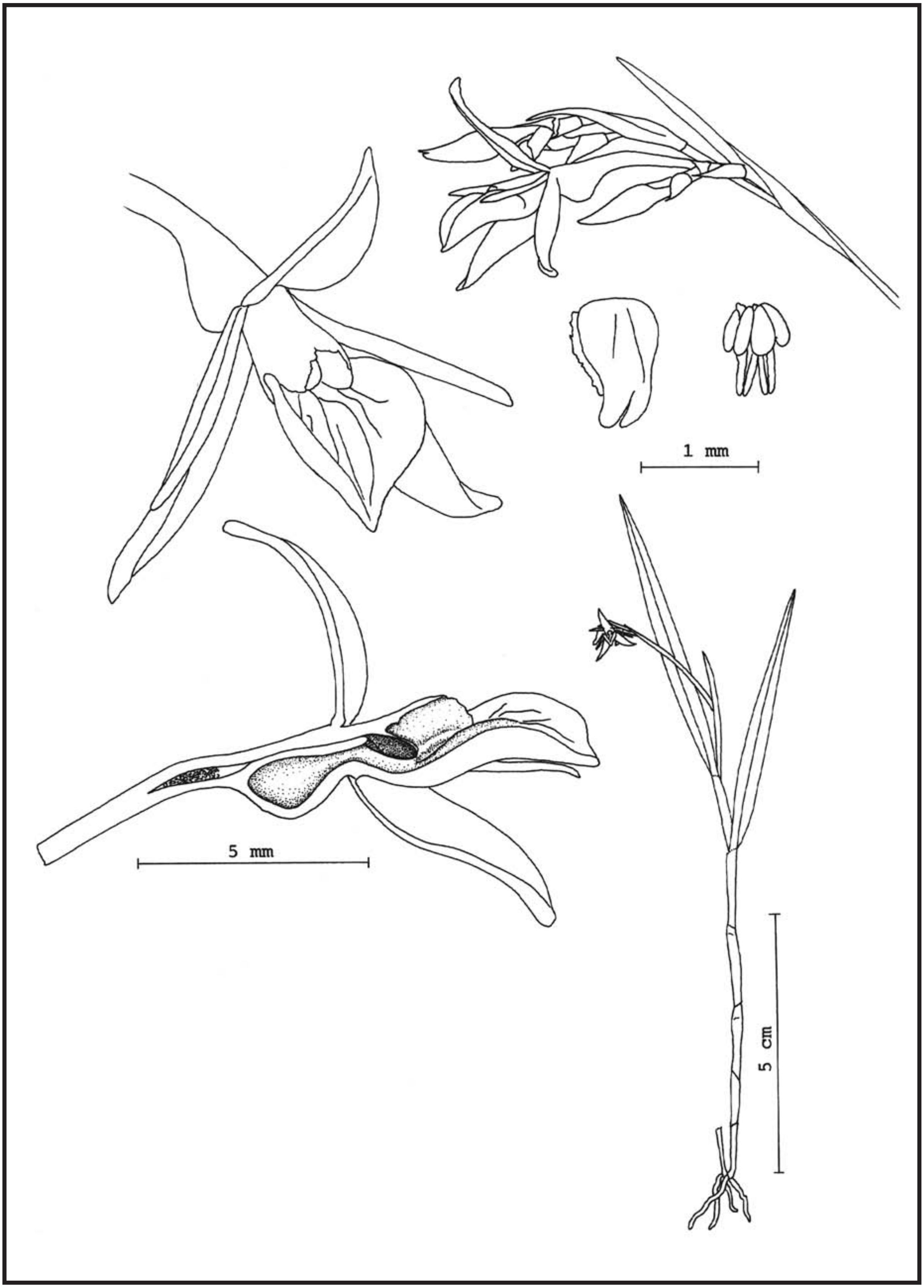
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CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin, *culmus*, the cane-like stem common to cereals, with several nodes, in reference to the very thin stem of this species.

REFERENCES: Hamer, F., 1974, **Las Orquídeas de El Salvador** 1: 188-189. Hamer, F., 1982, *Epidendrum chloe*, in C. H. Dodson, **Icon. Pl. Trop.** 8: pl. 710. Hamer, F., 2001, *Orchidaceae* Juss., in W.D. Stevens et al., (*eds*.), **Flora de Nicaragua** 85(2): 1680. Missouri Botanical Garden Press, St. Louis, Missouri, U.S.A. Soto, M. et al., 2007, **Orchids of Mexico**, Digital Catalogue: fig. 0318, Instituto Chinoín, México.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM CYSTOSUM Ames **Plate 1325**

EPIDENDRUM CYSTOSUM Ames, Bot. Mus. Leafl. 2(9):105. 1934.

Type: HONDURAS: Yoro: Bajo Grande, 3000 ft, 14 March 1934, ***J. B. Edwards 675.*** Holotype: AMES!

Hierba epífita, simpodial, cespitosa, 5.5-16 cm de alto. **Raíces** basales, carnosas, delgadas, blancas, 0.5-1.4 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base a lateralmente aplanados en el ápice, delgados, erectos, rectos, 4-13.5 x ca. 0.1-0.2 cm. **Hojas** 3-6, distribuidas a lo largo del tallo, articuladas, alternas, gramíneas, insertadas a un ángulo de unos 45° al tallo; vainas tubulares, lateralmente aplanadas, lisas, 6-24 x 1-2 mm; lámina linear lanceolada, aguda a acuminada, papirácea cuando seca, frecuentemente oblicua, margen entero, levemente revoluto cuando seco, 4.5-9 x 0.2-0.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, corta, (generalmente más pequeña que la hoja apical), erecta, racemosa, produciendo racimos nuevos durante varios años y entonces pluriracemosa, pauciflora, laxa, 1.5-4.5 cm de largo; pedúnculo delgado, lateralmente aplanado, erecto, generalmente recto, 1-3 cm de largo; provisto de 3 brácteas (que lo cubren completamente) tubulares, lateralmente aplanadas, algo ancipitosas, acuminadas, parcialmente imbricadas, de tamaño decreciente, escariosas, 5-28 mm de largo; raquis corto, terete, delgado, 4-17 mm de largo. **Brácteas florales** mucho más cortas que el ovario, anchamente infundibuliformes, agudas, 2-2.5 mm de largo. **Ovario** terete, delgado, liso, con una vesícula ventral prominente detrás del perianto, 8-11 mm de largo. **Flores** 3-11 por racimo, sucesivas, desarrollándose una a una a la vez, resupinadas, sépalos y pétalos verdoso lavanda, el labelo amarillo verdoso con el margen lavanda, columna blanco verdoso con tonos lavanda; sin datos de fragancia. **Sépalos** entreabiertos, libres, lanceolados, acuminados, el ápice levemente recurvado, 3-nervados, margen entero, extendido, 7-9 x 2-3 mm; los **laterales** oblicuos, con una quilla dorsal. **Pétalos** entreabiertos, libres, linear-filiformes, agudos, 1-nervados, margen entero, extendido, 7-8.5 x 0.4-0.7 mm. **Labelo** unido a la columna, cuneado en la base, elíptico a suborbicular, el ápice subagudo, diminutamente apiculado, carnoso, margen entero, extendido, 5-5.2 x 4.7-5 mm; bicalloso, los callos paralelos, delgados, se desvanecen antes de la mitad de la lámina; lámina provista de 5 quillas muy prominentes, laminares, altas, las laterales ramificadas, desvaneciéndose cerca del ápice del labelo. **Columna** corta, recta, gruesa, con un clinandrio prominente, 2.6-3 mm de largo. **Clinandrio** prominente, sobrepasando ligeramente el cuerpo de la columna, margen apical eroso. **Antera** obovoide, con el ápice bífido, 4 locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, del doble del largo de los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** obsoletos. **Nectario** penetrando cerca de 1/3 del ovario, formando una vesícula ventral muy prominente justo detrás del perianto, liso. **Cápsula** elipsoide, con el perianto persistente, cuerpo 11-13 x 6.5-10 mm; pedicelo delgado, de 5-7 mm de largo; cuello apical ausente.

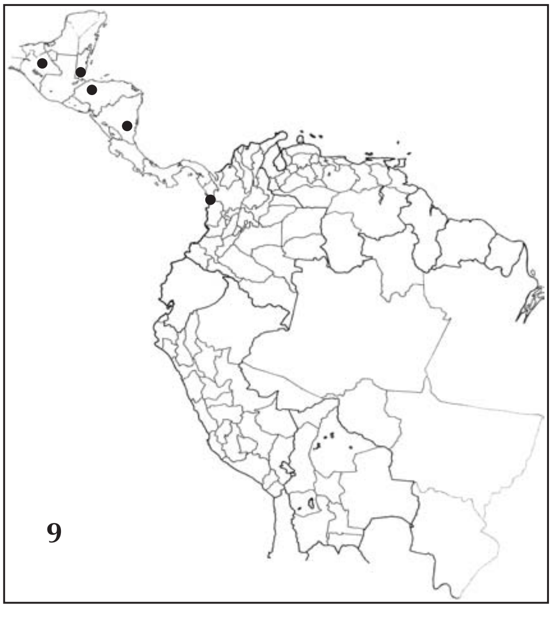
Epiphytic, sympodial, caespitose **herb. Roots** basal, thin. **Stems** simple, cane-like, terete at the base, laterally compressed above, thin, straight, erect. **Leaves** 3-6, distributed throughout the stem, articulate, alternate, grassy, inserted at an angle of about 45°; sheaths tubular, laterally compressed; blade linear-lanceolate, acute to acuminate, papiraceous when dry, frequently oblique, margin slightly revolute when dry. **Inflorescence** apical, short, generally shorter than the apical leaf, erect, racemose, producing new racemes over several years and thus pluriracemose, lax, few-flowered; peduncle thin; provided with 3, tubular somewhat ancipitose, acuminate, partly imbricating, bracts that totally cover the peduncle; rachis short. **Floral bracts** much shorter than the ovary, widely infundibuliform, acute. **Ovary** terete, thin, with a prominent, ventral vesicle behind the perianth. **Flowers** 3-11 per raceme, successive, resupinate, sepals and petals greenish lavender, lip greenish yellow, the margin lavender, column greenish white tinged with lavender. **Sepals** partly spreading, free, lanceolate, acuminate, the apex somewhat recurved, 3-veined, margin entire; the lateral sepals oblique, with a dorsal keel. **Petals** partly spreading, free, linear-filiform, acute, 1-veined, margin entire. **Lip** united to the column, cuneate at the base, elliptic to sub-orbicular, apex sub-acute, minutely apiculate, fleshy, margin entire, spreading; bicallose, the calli parallel, thin; blade provided with 5 prominent, high, laminar keels, the lateral ones branched, disappearing close to the apex of the lip. **Column** short, straight, thick, with a prominent clinandrium-hood. **Clinandrium-hood** prominent, as long as the body of the column, apical margin erose. **Anther** obovoid, with a bifid apex, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose, twice as long as the pollinia. **Rostellum** apical, slit. **Nectary** penetrating about 1/3 of the ovary, forming a very prominent ventral vesicle just behind the perianth, smooth. **Capsule** ellipsoid, perianth persistent.

OTHER SPECIMENS: MEXICO: Chiapas: Ocosingo: Estación Chajul, 150 m, 13 XII 1992, *Martínez 25857*, AMO x2! Ibid. 14 III 1993, *Martínez 26306*, AMO! Ibid. *Martínez 26321*, AMO! Ibid. 19 IV 1993, *Martínez 26407*, AMO! **BELIZE: Toledo:** Jacinto Creek, Río Grande, 18 X 1944, *Gentle 4898*, LL! Punta Gorda-Seven Hills Road, right ascending Río Grande, 23 XI 1944, *Gentle 4995,* LL! Between Orange Point and Moho River, 21 IV 1952, *Gentle 7658,* LL! Ibid. *Gentle 7659*, LL! Ibid. *Gentle 7660,* LL! **NICARAGUA Matagalpa**; 1100 m, 9 I 1981, *Guzmán y Castro 1607B*, MO!

OTHER RECORDS: NICARAGUA: Zelaya: Rama road W of Esperanza, 450 ft, IV 1965, *Heller 10285*, illustration and personal notes, SEL xerox at AMO! **COLOMBIA: Chocó:** Bahía Solano, slide, *Dressler s.n.*, AMO! Ibid. collected 10 III 1983, drawing (by Hágsater) 16 VIII 1983, *Hágsater 7134*, spirit, AMO! (Illustration voucher) Ibid. *Misas 40*, [inflorescence longer than the apical leaf, arching], xerox of illustration, AMO! Ibid. slide, *Ortiz Valdivieso, s.n.*, HPUJ!

DISTRIBUTION AND ECOLOGY: Widespread along the Caribbean lowlands from southern Mexico (Chiapas) to Nicaragua, and the Pacific lowlands of the Chocó in Colombia, epiphytic in rainforest, at 135-1100 m altitude. Flowering from August to April.

RECOGNITION: *Epidendrum cystosum* belongs to the Physinga Group which is characterized by to the generally small, caespitose plants, the inflorescence apical and racemose producing new racemes with time and thus pluriracemose, the successive flowers opening one at a time on an elongate peduncle with acuminate bracts, the lip entire and the ovary with a prominent vesicle. The species is recognized by the thin stems, grassy leaves, short inflorescence (generally shorter than the apical leaf), the partly spreading floral segments, with the apices of the sepals slightly recurved, the elliptic to sub-orbicular lip with evident laminar keels, and the prominent clinandrium-hood with the margin erose. *Epidendrum macroclinium* Hágsater has succulent, ovate-lanceolate leaves, an elongate inflorescence, much longer than the apical leaf, reflexed petals and an obreniform lip with a single low keel, and the prominent clinandrium-hood with a fimbriate-dentate margin. *Epidendrum physodes* Rchb.f. has wider lanceolate, short-acuminate leaves (6-12 mm wide), the inflorescence longer than the apical leaf, spreading floral segments, the lip transversely elliptic, with a single low keel, and a very short clinandrium-hood with the margin thick and somewhat crenate. *Epidendrum prostratum* (Lindl.) Cogn. an Amazonian species is vegetatively very similar to *E. macroclinium* but the sepals and petals are partly spreading, the base of the lip deeply cordate, with 3 prominent keels on the disc, and the clinandrium-hood deeply emarginate, the margin entire.

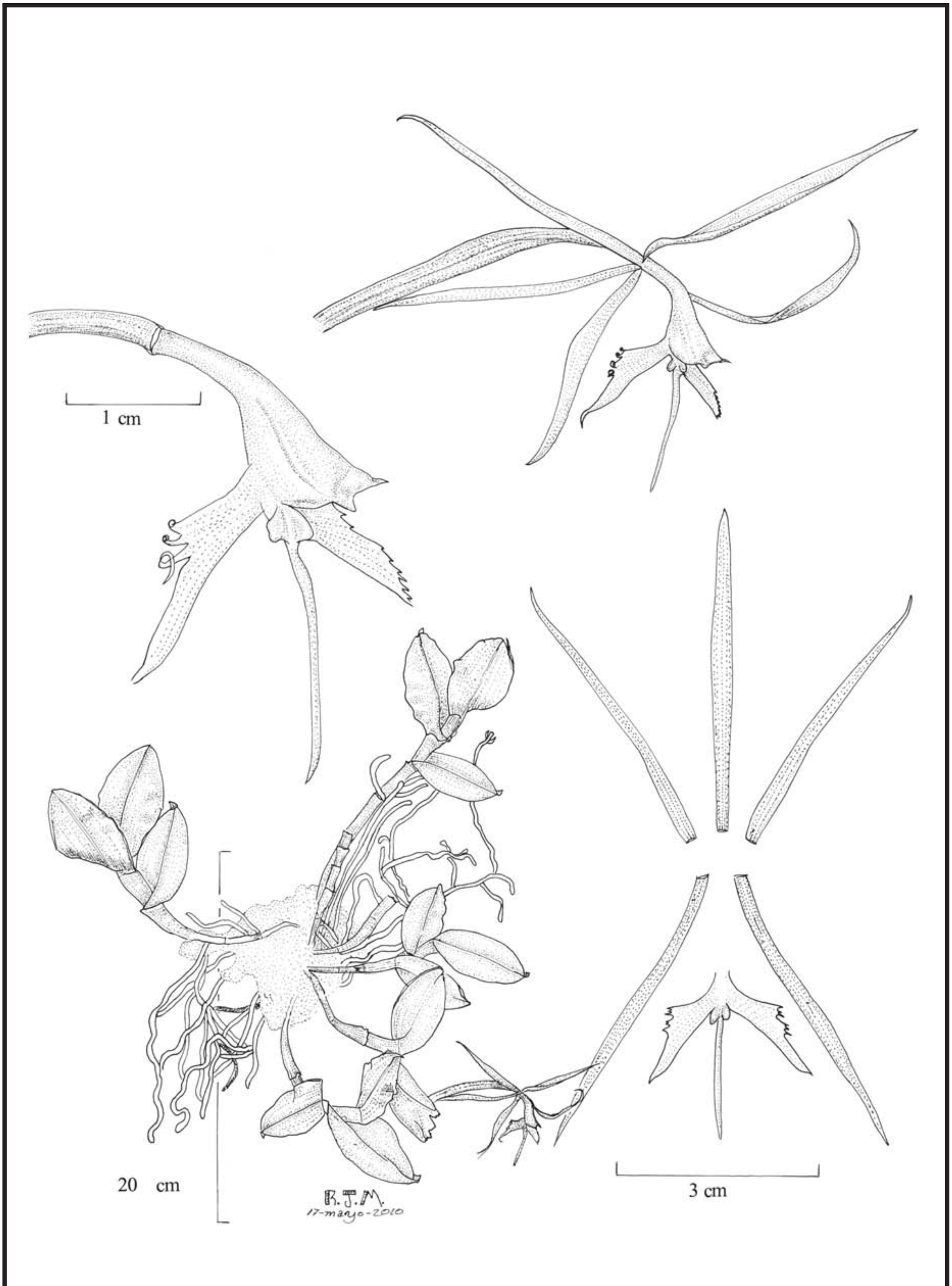


CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek κυστις, bladder in reference to the prominent ventral vesicle behind the perianth.

REFERENCES: Hamer F., 1985, *Epidendrum cystosum* Ames, in C.H. Dodson, (*ed.)*, Icon. Pl. Trop. 13: pl 1218. The Marie Selby Botanical Gardens, Sarasota, FL.

Authors: E. Santiago & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM DEGRANVILLEI Hágsater & L.Sánchez **Plate 1326**

EPIDENDRUM DEGRANVILLEI Hágsater *et* L.Sánchez, *sp. nov.*

Type: FRENCH GUIANA: Mont Galbao, Secteur Est, sommet, 3°36'N 53°17'W, 700 m, forêt submontagnarde, 15 Janvier 1986, ***J. J. de Granville, C. Feuillet, L. Hollenberg, O. Poncy, M. Sangrey 8723.*** Holotype: CAY! (Illustration voucher).

Epidendro archinocturno Hágsater simile sed floribus majoribus, sepalis petalisque brunneo-rubris, labelli lobulis lateralibus cum margine externo supra dimidium irregulariter dentato, columna utrinque dentem ferente, clinandrio integro cum dente unico in parte mediana superiore recedens.

Hierba epífita, simpodial, cespitosa, de 15-26 cm de alto. **Raíces** basales, carnosas, gruesas, 1.5-2.3 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente aplanados, ancipitosos, 7-15 x 0.55-1.0 cm. **Hojas** 2-3, distribuidas en el tercio apical del tallo, desiguales, las basales más pequeñas, coriáceas, alternas; vaina foliar, lateralmente aplanada, ancipitosa, lisa, púrpura, 15-23 mm de largo; lámina elíptica a ovado elíptica, ápice desigualmente bilobado, carina dorsal y venación evidentes, margen entero, relación largo/ancho 2:1, 4-7 x 2.0-3.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, sésil, racemosa, produce una sola flor a la vez y florece durante varios años. **Bráctea floral** mucho más corta que el ovario, oculta en la vaina foliar, abrazadora, triangular, aguda, 2.5 mm de largo. **Ovario** terete, liso, inflado ventralmente, no ornamentado, del doble de largo de los sépalos, 100 x 4.5 mm. **Flores** sucesivas, producidas una a la vez, resupinadas, sépalos y pétalos pardo rojo, fragancia no registrada. **Sépalos** extendidos, libres, lineares, acuminados, 5-nervados, margen entero, revoluto, 48-49 x 2.9-3.2 mm. **Pétalos** extendidos, libres, linear lanceolados, acuminados, 3-nervados, margen entero, revoluto, 45 x 2 mm. **Labelo** unido a la columna, trilobado, base anchamente cuneada, 25 x 22 mm; bicalloso, los callos laminares, prominentes; lóbulos laterales angostamente semirómbicos, agudos, margen externo irregularmente dentado arriba de la mitad externa, el resto entero, 4.5 x 18 mm; lóbulo medio linear, acuminado, margen entero, extendido, 21 x 0.7 mm. **Columna** gruesa, arqueada, con un diente triangular, agudo a cada lado, 19 mm de largo, 4.7 mm de ancho cerca del ápice. **Clinandrio** prominente, margen entero con un diente prominente, suberecto, en la parte media superior, triangular y agudo. **Antera** no vista. **Polinios** no vistos. **Rostelo** no visto. **Lóbulos laterales del estigma** no vistos. **Nactario** no visto. **Cápsula** no vista.

Epiphytic, sympodial, caespitose, short **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, laterally compressed, ancipitose. **Leaves** 2-3, distributed along the apical 1/3 of the stem, unequal, the basal ones smaller, coriaceous, alternate; foliar sheath laterally compressed, ancipitose, smooth, purple; blade elliptic to ovate-elliptic, 2:1, apex unequally bilobed, with evident veins and a dorsal keel, margin entire. **Inflorescence** apical, sessile, racemosa, producing one flower at a time, flowering during several years. **Floral bracts** much shorter than the ovary, hidden within the foliar sheath, triangular, acute, amplexicaul. **Ovary** terete, smooth, ventrally inflated, unornamented; twice as long as the sepals. **Flowers** successive, one at a time, resupinate, sepals and petals red-brown. **Sepals** spreading, free, linear, acuminate, 5-veined, margin entire, revolute. **Petals** spreading, free, linear-lanceolate, acuminate, 3-veined, margin entire, revolute. **Lip** united to the column, 3-lobed, base widely cuneate; bicallose, the calli laminar, prominent; lateral lobes narrowly semi-rhombic, acuminate, the external margin irregular-dentate beyond the middle, the rest of the margin entire; mid-lobe linear, acuminate, margin entire, spreading. **Column** thick, arching, with a triangular, acute tooth on each side. **Clinandrium-hood** prominent, margin entire with a prominent, sub-erect, triangular, extension in the middle. **Capsule** not seen, but due to the thickening of the ovary, the body is probably located towards the apex, with a long pedicel.

OTHER SPECIMENS: None seen.

DISTRIBUTION AND ECOLOGY: Known only from the French Guyana, epiphytic at 700 m altitude. Flowering in January.

RECOGNITION: *Epidendrum degranvillei* belongs to the Nocturnum Group which is characterized by the sympodial, caespitose plants, short, racemose or pluri-racemose inflorescence, without spathaceous bracts, usually large, star-shaped flowers, with similar sepals and petals, and the Nocturnum Subgroup which has cane-like stems, non-thickened towards the middle, and usually successive flowers; the flowers are mostly indistinguishable in shape. The species can be recognized by short plants, ancipitose stems, with 2-3 elliptic to ovate-elliptic leaves, length/width: 2:1; ovary twice as long as the sepals which are 48-49 mm long, sepals and petals red-brown, the lateral lobes of the lip narrowly semi-rhombic, the outer margin irregularly dentate beyond the middle, the rest entire, the column with an acute, triangular tooth on each side, and the clinandrium-hood with a prominent, sub-erect, triangular, acute extension in the middle. It is similar to *Epidendrum anchinocturnum* Hágsater, a species endemic to the Valle del Cauca in Colombia, but the flowers of that species are smaller, sepals 26-29 mm long, the margins of the lip all entire, column short, 13 mm, without lateral teeth, and the clinandrium-hood is dentate. Other species of this group with a similar leaf length/with ratio have taller plants, longer ovaries and larger flowers, the margins of the lip entire and the clinandrium-hood erose to dentate, they include *Epidendrum angustilobum* Fawc. & Rendle (syn. *Epidendrum latifolium* (Lindl.) Garay & Sweet), *Epidendrum carpophorum* Barb. Rodr., *Epidendrum macroophorum* Hágsater & Dodson & *Epidendrum tridens* Poepp. & Endl.

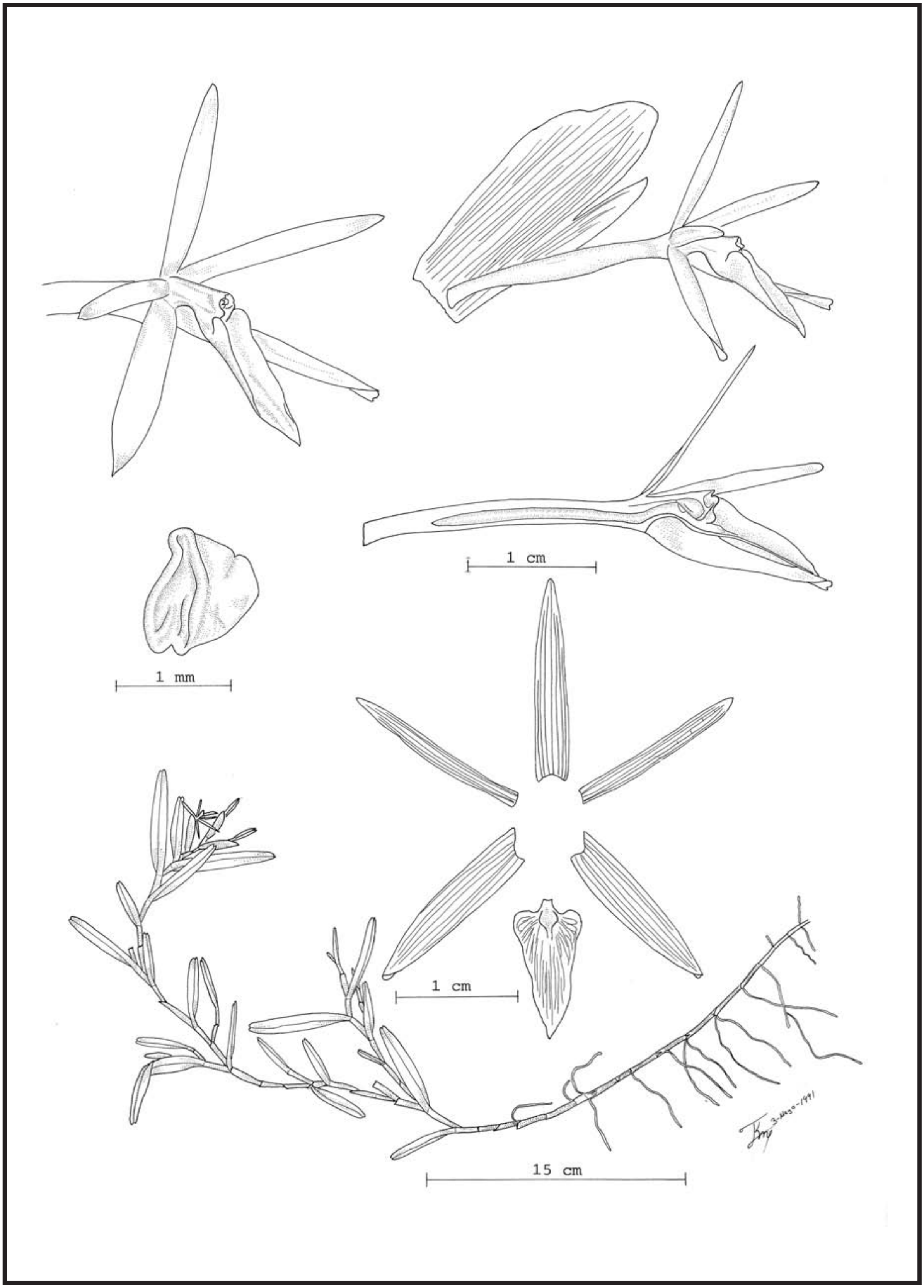

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CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Jean-Jacques de Granville (b. 1943), Director Research of the Institut de Recherche et Developpement (IRD) and the Herbarium at Cayenne, specialist in forest flora, especially monocots and understory species; phytogeography; Arecaceae, and conservation. He collected the type. Most of his collections are deposited at CAY.

REFERENCES: Hágsater, E. 1999. *Epidendrum anchinocturnum* Hágsater in Hágsater, E. Sánchez , S. L. & J. García-Cruz (eds.), **Icon. Orchid. (Mexico)** 3: pl. 305.

Authors: E. Hágsater & L. Sánchez S. **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM DOSBOCASENSE Hágsater **Plate 1327**

EPIDENDRUM DOSBOCASENSE Hágsater, Orquídea (México City) 12(2): 282. 1992.

Type: PANAMA: Veraguas: Guabal, Río Dos Bocas, about 16 km northwest of Santa Fé, ca. 500 m, 15-16 Nov. 1974, ***Robert L. Dressler 4814.*** Holotype: AMO! (Illustration voucher). Isotype: MO!

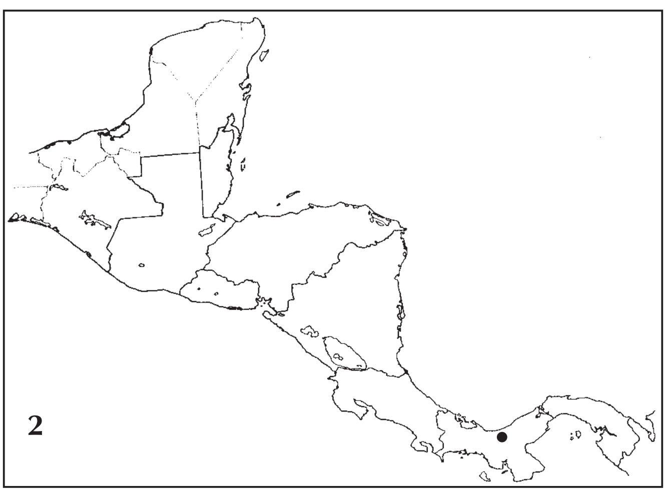
Hierba epífita, de tallos rastreros, 35-60 cm o más de largo. **Raíces** producidas de los tallos basales y ocasionalmente a lo largo de los tallos y ramas, delgadas, ca. 1 mm de grosor. **Tallos** sucesivos, los tallos nuevos se producen cerca del ápice del tallo anterior ramificados, tipo caña, rectos, teretes, 5-30 x 1.3 cm. **Hojas** numerosas, dísticas, distribuidas a todo lo largo de los tallos, verdes, las superiores bronceadas; vaina tubular, algo estriada (en seco), hasta 2.5 cm de largo; lámina progresivamente más largas hasta la penúltima, angostamente elíptico ligulada, subcoriácea, lisa, ápice bilobado, margen entero; 3-6.7 x 0.6-1.0 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical en cada tallo, florece una sola vez, racemosa, dística, ca. 5-6 cm de largo, con 1-2 brácteas cubriendo el pedúnculo, más pequeñas que las brácteas florales, de 10-13 x 6 mm, raquis visible, flexuoso, liso. **Brácteas florales** conduplicadas, prominentes, ligeramente más largas que el ovario, obovadas al extenderse, 21-26 x 6-9 mm. **Flores** 2-4, sucesivas, aparentemente una abierta a la vez, verdes, fragancia no registrada. **Ovario** algo inflado ventralmente hasta cerca de la base, liso, 20-23 mm de largo. **Sépalos** extendidos, libres, angostamente lanceolados, glabros, subcoriáceos, aristados, quilla dorsal apical, prominente, 7-nervados, margen entero, revoluto, 16 x 3.5 mm. **Pétalos** extendidos, lineares, agudos, membranáceos, 3-nervados en la base, arriba 5-nervados, margen entero, extendido, 15-16 x 1.5 mm. **Labelo** unido a la columna, entero, angostamente triangular cordiforme, agudo, subcoriáceo, 10 x 5.5 mm; callo en forma de "Y". **Columna** recta, delgada, 4.5-5.5 mm de largo. **Clinandrio** corto, entero, margen eroso. **Antera** reniforme, cóncava, con un seno en el ápice, 4-locular. **Polinios** 4, semiovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas; viscidio semilíquido, transparente. **Lóbulos laterales del estigma** pequeños, de 1/3 de la cavidad estigmática. **Nectario** muy profundo, penetrando 3/4 partes del ovario, delgado, liso. **Cápsula** no vista.

Epiphytic, creeping **Herb. Roots** produced from the basal stems and occasionally throughout and from the branches, thin. **Stems** successive, the new stems produced from near the apex of the previous stem or branches, cane-like, straight, terete. **Leaves** numerous, distichous, distributed throughout the stems, green, the upper ones copper-tinged; sheaths tubular, somewhat striated (when dry); blade progressively longer until the one before the apical leaf, narrowly elliptic-ligulate, sub-coariaceous, smooth, apex bilobed, margin entire. **Inflorescence** apical from each stem, flowering only once, racemose, distichous, with 1-2 bracts covering the peduncle, smaller than the floral bracts, rachis visible, flexuous, smooth. **Floral bracts** conduplicate, prominent, slightly longer than the ovary, obovate when spread. **Flowers** 2-4, successive, apparently one open at a time, green. **Ovary** somewhat inflated ventrally nearly to the base, smooth. **Sepals** spreading, free, narrowly lanceolate, glabrous, sub-coriaceous, aristate, with a prominent, apical dorsal keel, 7-veined, margin entire, revolute. **Petals** spreading, linear, acute, membranaceous, 3-veined at the base, 5-veined above, margin entire, spreading. **Lip** united to the column, entire, narrowly triangular-cordiform, acute, sub-coriaceous; callus “Y” shaped. **Column** straight, thin. **Clinandrium-hood** short, entire, margin erose. **Anther** reniform, concave, with an apical sinus, 4-celled. **Pollinia** 4, semi-ovoid, laterally compressed, sub-equal; caudicles soft and granulose; viscidium semi-liquid, transparent. **Nectary** very deep, penetrating ¾ of the ovary, thin, smooth.

OTHER SPECIMENS: PANAMA: Veraguas: Guabal, Río Dos Bocas, about 16 km northwest of Santa Fé, ca. 500 m, 15-16 XI 1974, *Dressler 4801,* AMO! F!

DISTRIBUTION AND ECOLOGY: Known only from Veraguas, Panama, on the Pacific slopes. Epiphyte, ca. 500 m altitude. Flowering in November.

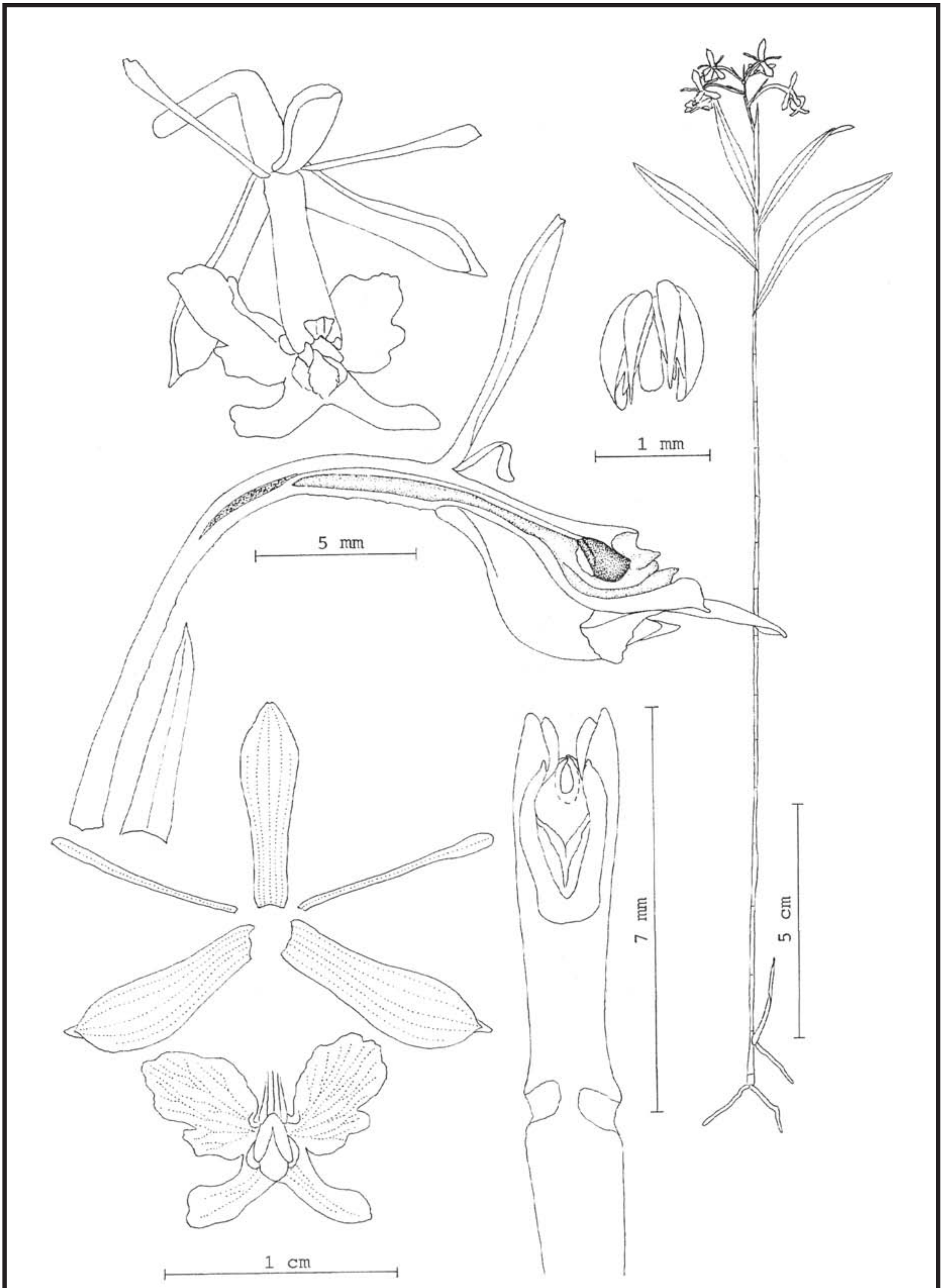
RECOGNITION: *Epidendrum dosbocasense* belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the Flexicaule Subgroup which has a straggling plant habit, where the main stem is not very evident, and the sepals have a dorsal keel which is generally prominent. The species is recognized by the straggling, somewhat branching plants, the largest star-shaped flowers in the Subgroup, sepals 16 mm long, with spreading floral segments, ovary 20-23 mm long, a deep nectary, and intermediate sized leaves 3-6.7 x 0.6-1.0 cm. *Epidendrum modestiflorum* Rchb.f. has short (< 5 cm), wide leaves, (up to 15 mm), the relatively large green flowers, sepals 11 mm long, the lip constricted below the middle, 6.4-4.5 mm, and the deep nectary without forming a prominent vesicle. It is similar to *E. veraguasense* Hágsater from Panama, which has white flowers, a larger lip, 8 x 6 mm, constricted above the middle, and the nectary only penetrates half the ovary and forms a prominent vesicle behind the perianth. *Epidendrum flexicaule* Schltr. has very similar copper-green flowers but the leaves are consistently longer (> 5 cm), narrower (< 8 mm), and a larger lip, 7 x 6 mm.



CONSERVATION STATUS: DD (Data deficient).

ETYMOLOGY: In reference to “Dos Bocas”, the name of the river where the species was collected.

Authors: L. Sánchez S. & E. Hágsater **Illustrator : R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM ENGLERIANUM F.Lehm. & Kraenzl. **Plate 1328**

EPIDENDRUM ENGLERIANUM F.Lehm. & Kraenzl., Bot. Jahrb. Syst. 26: 466. 1899.

Type: ECUADOR: montis Tungurahua, 1800-2500 m, ***F. Lehmann 6721.*** Lectotype [here designated]: K-L! Isolectotypes: AMES! LE! Paratypes: ibid. *Lehmann 6722*, AMES! L! LE! NY! US! Dodson (1999) cited the holotype as *Lehmann 6721*, at K-L, and an isotype at AMES. The original description cites both collecting numbers.

Synonym: *Epidendrum fastigiatum* Lindl. var. *bifidum* Rchb.f., Otia Bot. Hamb. 12(1): 13, 1878. Type:ECUADOR: Tunguragua, 8-9000', Juni 1877, ***F. C. Lehmann 78***, W-R 49546!

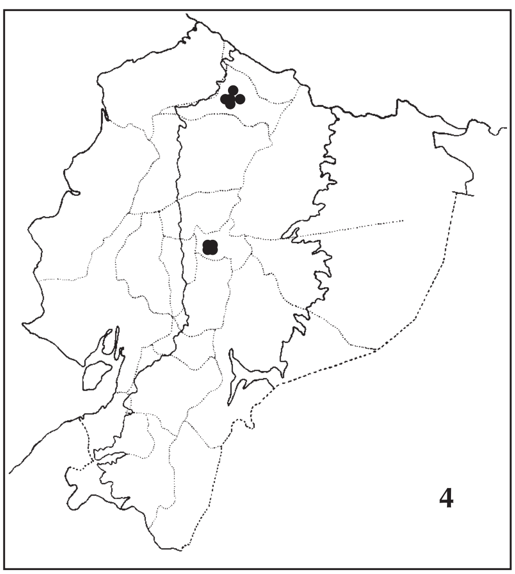
Hierba epífita o terrestre, simpodial, cespitosa, erecta, de 20-50 cm de alto. **Raíces** basales, carnosas, delgadas, 1-2 mm de grosor. **Tallos** sencillos, tipo caña, teretes, delgados, erectos, rectos, 12-40 x 0.1-0.3 cm; cubiertos en la mitad basal por vainas tubulares no foliares, escariosas y fibrosas con el tiempo, 1.5-4 cm de largo. **Hojas** 8-11, distribuidas en la mitad apical del tallo, dísticas, articuladas, suberectas; vainas tubulares, finamente estriadas, 0.8-3 x 0.1-0.3 cm; lámina angostamente lanceolada, acuminada, diminutamente apiculada, gramínea, margen entero, 3-13.5 x 0.6-1.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, paniculada, suberecta a ligeramente arqueada, pauciflora, laxa, 9-15 cm de largo; pedúnculo delgado, lateralmente aplanado, recto, 3-5.5 cm de largo; provisto por 1-3 brácteas tubulares, linear triangulares, acuminadas, 2-5 cm de largo; raquis terete, delgado, algo flexuoso, con 1-2 racimos paucifloros, laxos, 3-8.5 cm de largo; cada racimo con una bráctea basal linear triangular, acuminada, abrazadora, 1-2.5 cm de largo. **Brácteas florales** más cortas que el ovario, angostamente triangulares, acuminadas, abrazadoras, 3-13 mm de largo. **Ovario** terete, delgado, no inflado, no ornamentado, 20-25 mm de largo. **Flores** [4]15-20, simultáneas, resupinadas, de color púrpura oscuro con el ápice la columna y el labelo rosados, (aunque hay poblaciones albinas de flores totalmente blancas o verde manzana con el labelo blanco); sin fragancia. **Sépalos** reflexos, libres, carnosos, angostamente oblanceolados, obtusos, 5-nervados, las nervaduras claramente marcadas en la superficie dorsal, no ornamentados, margen entero, ligeramente involuto, 10-13 x 2-3 mm; los **laterales** ligeramente oblicuos, dorsalmente apiculados. **Pétalos** reflexos, libres, filiforme-espatulados, con el ápice redondeado, 1-nervados, margen entero, extendido, 9-12 x 0.3-0.5 mm. **Labelo** unido a la columna, 3-lobado, profundamente cordado en la base, 8-12 x 10-12 mm; bicalloso, los callos delgados, prominentes, alargados más allá de la base del lóbulo medio y casi paralelos a las quillas laterales del disco; disco con 3 quillas evidentes, la central prominente, ancha, muy carnosa, alargada hasta el seno apical de la lamina; las laterales, más cortas, mucho más delgadas, semejantes a los callos; lóbulos laterales falcado-oblongos, fuertemente retrosos, margen irregular, 3-6 x 5-6 mm; lóbulo medio bilobado, profundamente emarginado, con un par de lóbulos lineares, obtusos, fuertemente divaricados, margen entero, 4-6 x 8-9 mm. **Columna** recta, delgada, el ápice con un par de dientes diminutos, 7-8 mm de largo. **Clinandrio** reducido, margen entero. **Antera** 4-locular. **Polinios** 4, tipo "ala de pájaro", fuertemente comprimidos lateralmente, desiguales, el par interior algo más corto. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** prominentes, de la mitad del largo de la cavidad estigmática. **Nectario** poco profundo, penetrando 1/3 del ovario, no inflado, no ornamentado. **Cápsula** elipsoide, con el perianto persistente; pedicelo 11-15 mm de largo; cuerpo 20-22 x 9-11 mm; cuello apical 7 mm de largo.

Epiphytic or terrestrial, sympodial, erect **herb. Roots** basal, fleshy, thin. **Stems** simple, cane-like, terete, thin, erect, straight; the basal half covered by non-foliar, tubular, scarious sheaths becoming fibrous with time. **Leaves** 8-11, distributed along the apical half, distichous, articulate, sub-erect; sheaths tubular, minutely striated; blade narrowly lanceolate, acuminate, minutely apiculate, grass-like, margin entire. **Spathaceous bract** lacking. **Inflorescence** apical, paniculate, sub-erect to slightly arching, lax, few-flowered; peduncle thin, laterally compressed, straight, provided with 1-3 tubular, linear-triangular, acuminate, long bracts; rachis terete, thin, somewhat flexuous, composed by 1-2 few-flowered racemes, each raceme with a basal, linear-triangular, acuminate amplexicaul bract. **Floral bracts** shorter than the ovary, narrowly triangular, acuminate, amplexicaul. **Ovary** terete, thin, not inflated, smooth. **Flowers** [4] 15-20, simultaneous, resupinate, deep purple, the apex of the column and lip pink (though there are some albino populations where the flowers are apple green, and the apex of the column and lip white); without fragrance. **Sepals** free, reflexed, fleshy, narrowly oblanceolate, obtuse, 5-veined, the veins clearly marked on the dorsal surface, unornamented, margin entire, slightly involute; lateral sepals slightly oblique, dorsally apiculate. **Petals** free, reflexed, filiform-spatulate, apex rounded, 1-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base deeply cordate; bicallose, the calli thin, prominent, elongate, reaching beyond the base of the mid-lobe, and nearly parallel to the 3 evident keels of the disc, the mid-keel prominent, wide, very fleshy, reaching the apical sinus, the side keels much shorter and narrower, similar to the calli; lateral lobes oblong-falcate, strongly retrorse, margin irregular; mid-lobe bilobed, deeply emarginate, forming a pair of linear, obtuse, strongly divaricate lobes, margin entire. **Column** straight, thin, long, the apex with a pair of minute teeth. **Clinandrium-hood** reduced, margin entire. **Anther** 4-celled. **Pollinia** 4, "bird-wing" type, strongly laterally compressed, unequal, the inner pair somewhat shorter. **Rostellum** sub-apical, slit. **Nectary** shallow, penetrating 1/3 of the ovary, not inflated, smooth. **Capsule** ellipsoid, perianth persistent, with a thin pedicel and apical neck.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Known only from the amazonian slope of the Andes in northern Ecuador, in the provinces of Napo and Tunguragua, epiphytic or terrestrial, at 1500-2600 m altitude. Flowering throughout the year.

RECOGNITION: *Epidendrum englerianum* belongs to the Pseudepidendrum Group is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, apical inflorescence, lacking a spathaceous bract, the petals filiform and the lip usually 3-lobed, with 3 parallel fleshy keels, the apical lobe often bifurcate, and the pollinia "bird-wing" type and Porphyreum Subgroup with colored flowers ranging from reddish orange to dark purple or lilac-pink, generally with prominent calli, sometimes horn-like. The species is recognized by the small plants (20-50 cm tall), narrowly lanceolate leaves (3-13.5 x 0.6-1.5 cm); lax, few-flowered inflorescence with the sepals and petals deep purple, the apex of the column and lip pink (there does exist an albino form, with green and white flowers), sepals reflexed, 10-13 mm long; base of lip deeply cordate, lateral lobes falcate-retrorse; calli thin, prominent. *Epidendrum peraltum* Schltr. has taller plants (60-250 cm), lanceolate leaves (5.5-20 x 2.5-4.6 cm), many-flowered inflorescences, the flower greenish yellow tinged pink to totally dirty pink; sepals spreading, 14-16 mm long, the lateral lobes of the lip strongly retrorse, nearly parallel to the column. *Epidendrum porphyreum* Lindl. has 50-130 cm tall plants, narrowly elliptic leaves (8-17.5 x 1.5-4 cm), a dense inflorescence of up to 150, deep purple flowers, the disc white, spreading sepals 13-15 mm long; the lateral lobes of the lip spreading, and the mid-lobe with a pair of triangular, slightly divaricate lobes.



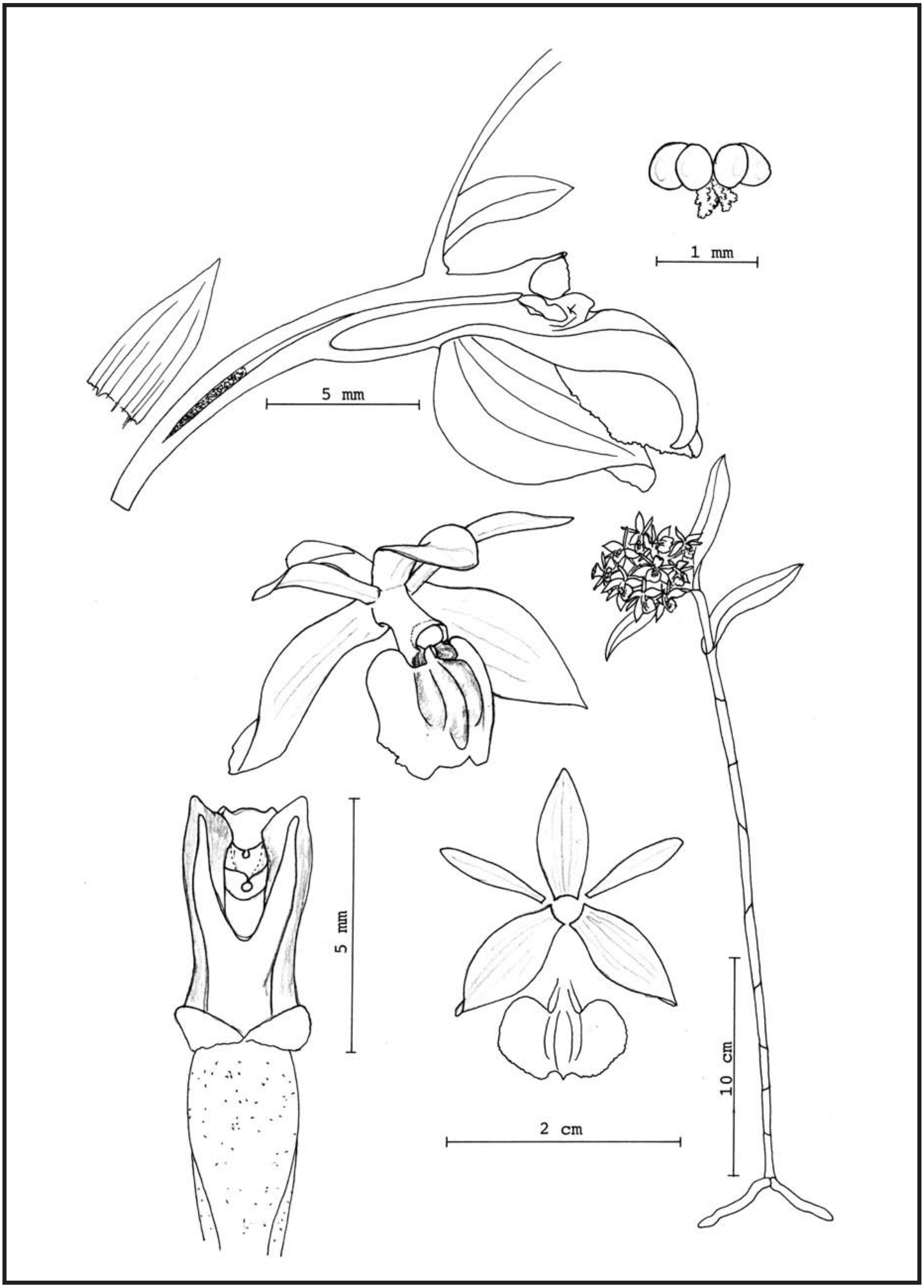
CONSERVATION STATUS: Common in the area where it is found in central Ecuador.

ETYMOLOGY: In honor of Heinrich Gustav Adolf Engler (1844-1930), German botanist, editor of Botanischen Jahrbücher between 1880 and 1930, where the new species was published. His work is a standard reference for plant taxonomists.

REFERENCE: Dodson, C. H., 1999. Orchidaceae in Jørgensen et al. (eds.), Catalogue of the Vascular Plants of Ecuador, **Monogr. Syst. Bot. Missouri Bot. Gard.** 75: 659.

Authors: E. Santiago & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**

Herbario AMO **México, D.F. MÉXICO**



EPIDENDRUM EUSTIRUM Ames, F.T.Hubb. & C.Schweinf. **Plate 1329**

EPIDENDRUM EUSTIRUM Ames, F.T.Hubb. & C.Schweinf., Bot. Mus. Leafl. 3: 70. 1935. Basionym: *Epidendrum carinatum* Lindl., Fol. Orch. Epidendrum p. 61. 1853. Type: MEXICO: Oaxaca: Sierra San Pedro Nolasco, Talea, 1843-1844. ***Jürgensen 647*****.** Holotype: K-L! (without illustration.) Isotypes: BM! G! W-R 49979! Photo of holotype (with a separate photo of illustration of flower of the type made by Lindley): AMES 24100! Sketch of Hooker's specimen and illustration of flower from Lindley´s Herbarium: W-R 49978! Tracing of holotype with illustration of flower: AMES 24101! *Non E. carniatum* L., 1753 [=*Dendrobium carinatum* (L.) Willd.]; *nec* Vahl, 1793 [=*Tolumnia variegata* (Sw.) Braem.]

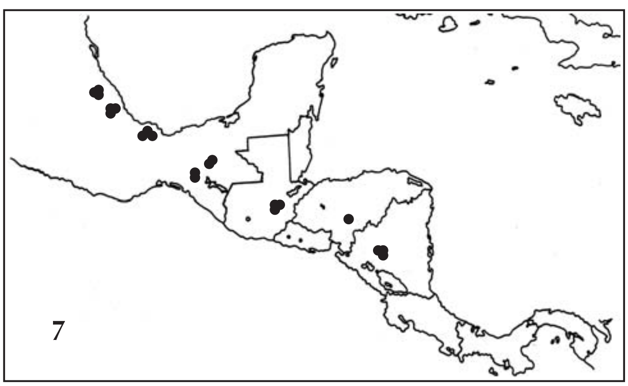
Hierba epífita, simpodial, cespitosa, erecta, 5.5-37 cm de alto. **Raíces** basales, carnosas, gruesas, 0.5-3.5 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base y algo lateralmente aplanados en el ápice, delgados, erectos, rectos, 4-31 x 0.1-0.5 cm; cubiertos por vainas (no foliares) tubulares, escariosas, 13-40 mm de largo. **Hojas** 3-5[10], distribuidas en la mitad apical del tallo, articuladas, dísticas; vaina tubular, finamente estriada, 3-32 x 1-5 mm; lámina lanceolada, aguda, con un apículo diminuto, coriácea, margen entero, extendido, [2.3]8-11 x 0.4-1.7 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa a raramente paniculada, arqueado nutante, corta, 1.5-6 cm de largo; pedúnculo lateralmente aplanado, delgado, 0.7-2.7 cm de largo; provisto de 2 brácteas angostamente triangulares, acuminadas, amplexicaules, 8-30 mm de largo; raquis algo fractiflexo, generalmente oculto por las brácteas florales. **Brácteas florales** prominentes, casi tan largas como el ovario, gradualmente más pequeñas, angostamente triangulares, acuminadas, abrazadoras, 4-15 mm de largo. **Flores** 4-30, simultáneas, resupinadas, verde pálido, en ocasiones los tépalos algo teñidos de cobrizo, centro del labelo púrpura rojizo; fragancia vespertina, cítrica, débil. **Ovario** terete, delgado, algo inflado justo detrás del perianto, 8-17 mm de largo. **Sépalos** libres, entreabiertos a extendidos, obovado elípticos, ápice agudo, 3-nervados, las nervaduras laterales bifurcadas desde la base dando la apariencia de ser 5-nervados, margen entero, extendido, 8-9 x 3-4 mm; el **dorsal** algo cuculado, con una quilla dorsal baja; los **laterales** ligeramente oblicuos, con una quilla dorsal alta, algo denticulada, muy prominente. **Pétalos** libres, extendidos a entreabiertos, angostamente oblanceolados, subagudos, 1-nervados, margen entero, extendido, 7.5-8 x 1.2-1.5 mm. **Labelo** unido a la columna, entero, reniforme, convexo en posición natural, cordado en la base y retuso en el ápice, diminutamente apiculado, margen ligeramente sinuado, extendido, 3-6 x 5-7.5 mm; bicalloso, los callos laminares, delgados, prominentes, cortos, frente al ápice de la columna; disco tricarinado, las carinas prominentes, engrosadas, cortas, desvaneciéndose poco antes del seno apical de la lámina. **Columna** corta, recta, gruesa, con un par de dientes redondeados justo debajo de la antera, 3.5-4 mm de largo. **Clinandrio** prominente (aunque sin sobrepasar el ápice de la columna), margen crenulado. **Antera** reniforme, 4-locular. **Polinios** 4, obovoides; caudículas suaves y granulosas de la misma longitud que los polinios. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** prominentes, de ½ del largo de la cavidad estigmática. **Nectario** poco profundo, penetrando una tercera parte del ovario, inflado, no ornamentado. **Cápsula** elipsoide; pedicelo delgado, terete, 5 mm de largo; cuerpo 17 x 12 mm; cuello apical obsoleto, con el perianto persistente.

Epiphytic, sympodial, caespitose, erect **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, terete at the base, somewhat laterally compressed towards the apex, thin, erect, straight; covered by non-foliaceous, scarious sheaths. **Leaves** 3-5[10], distributed along the apical half of the stem, articulate, distichous; sheath tubular, minutely striated; blade lanceolate, acute, with a minute apicule, coriaceous, margin entire, spreading. **Inflorescence** apical, flowering only once, racemose to rarely paniculate, arching-nutant, short; peduncle laterally compressed, thin, provided with 2 narrowly triangular bracts; rachis somewhat zigzag, generally hidden by the floral bracts. **Floral bracts** prominent, nearly as long as the ovary, gradually shorter, narrowly triangular, acuminate. **Flowers** 4-30, simultaneous, resupinate, pale green, the sepals occasionally tinged copper, the center of the lip reddish purple; with a slight afternoon fragrance of citrus. **Ovary** terete, thin, somewhat inflated behind the perianth. **Sepals** free, partly spreading to spreading, obovate-elliptic, apex acute, 3-veined, the lateral veins bifurcate from the bottom, and thus appearing 5-veined, margin entire, spreading; the dorsal sepal somewhat hooded, with a low dorsal keel, the lateral sepals slightly oblique, with a high, prominent dorsal keel, somewhat denticulate. **Petals** free, spreading to partly spreading, narrowly oblanceolate, sub-acute, 1-veined, margin entire, spreading. **Lip** united to the column, entire, reniform, convex in natural position, base cordate, apex retuse, minutely apiculate, margin slightly sinuous, spreading; bicallose, the calli laminar, thin, prominent but short, located in front of the apex of the column; disc 3-carinate, the keels in between the calli, prominent, fleshy, disappearing shortly before the apical margin of the lip. **Column** short, straight, thick, with a pair of rounded teeth just below the anther. **Clinandrium-hood** prominent, without surpassing the body of the column, margin crenulate. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, caudicles soft and granulose, as long as the pollinia. **Rostellum** sub-apical, slit. **Nectary** shallow, penetrating 1/3 of the ovary, inflated, smooth. **Capsule** ellipsoid, pedicel thin, terete, short; apical neck obsolete, perianth persistent,

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Ranging from Mexico [Puebla, Oaxaca, Veracruz & Chiapas], Guatemala, Honduras and Nicaragua; epiphytic at 360-1700 m altitude. Flowering September to April.

RECOGNITION: *Epidendrum eustirum* belongs to the Fruticosum Group characterized by the caespitose to creeping habit, few sub-coriaceous leaves, and the racemose to rarely paniculate inflorescence with green to purple tinged flowers and a very fleshy reddish purple disc on the lip consisting of 3 fleshy, thick, rounded keels. The species is recognized by the caespitose, unbranched habit, relatively narrow leaves (4-17 mm wide) the green flowers, the disc purple, and narrow, oblanceolate petals 1.2-1.5 mm wide. It is florally very similar to *Epidendrum fruticosum* Sessé & Mociño ex Lindl. which has a creeping, bush-like habit, heteromodular, ascending stems by substitution, distal stems diminishing markedly in size, relatively wide leaves, (10-30 mm wide), greenish yellow to intense wine-purple flowers, partly spreading floral segments, apex rounded, widely oblanceolate petals (3.2-4.8 mm wide), and the reniform lip, the disc with a thickened, fleshy, 5-lobed structure.

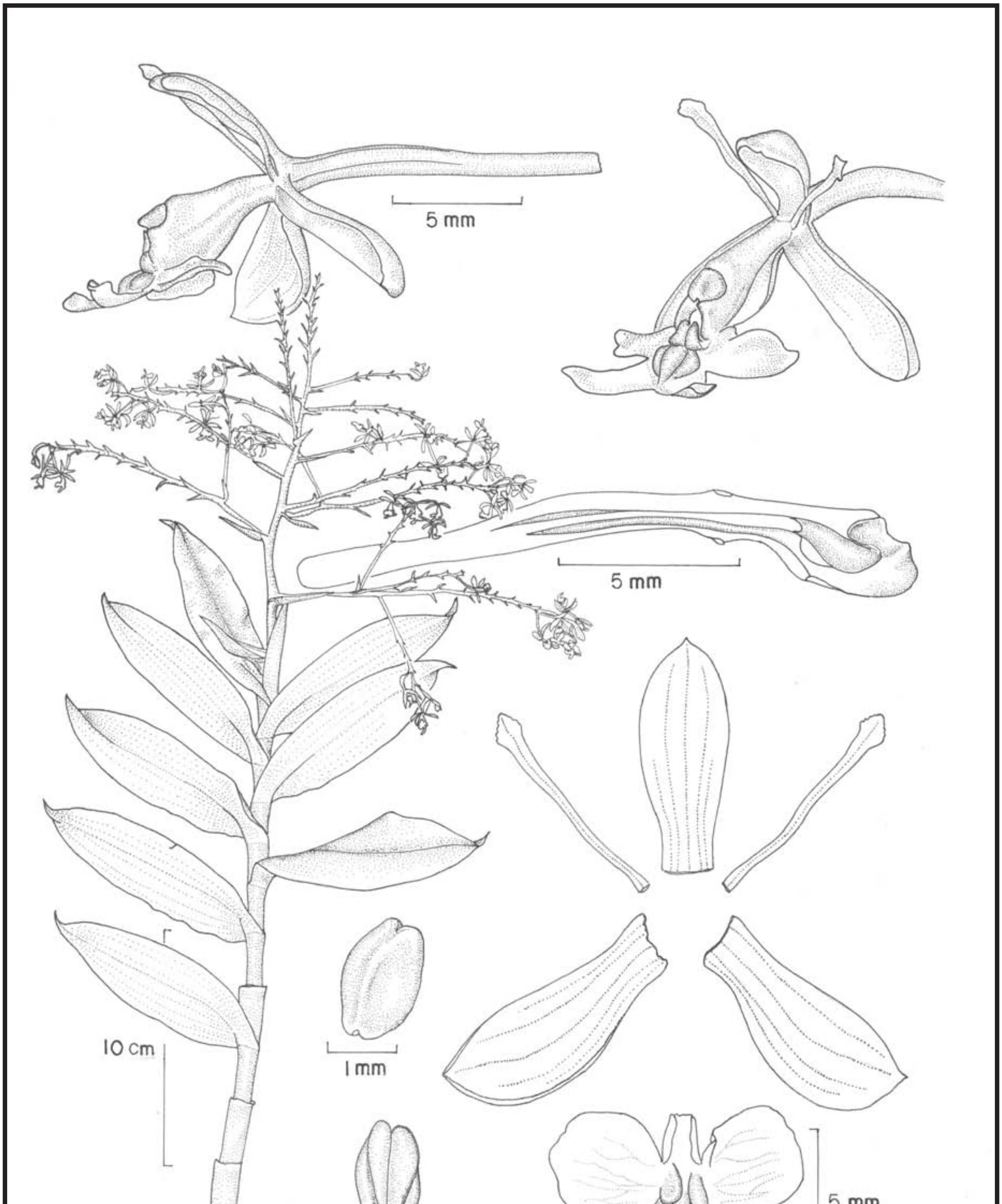


CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: The Greek specific name *eustirum* means well-keeled, in reference to the carinate sepals.

REFERENCES: García-Cruz, J., & L. Sánchez, 1999, ***Flora de Veracruz***, Orchidaceae II. *Epidendrum*: 112: 36-39. Hamer, F., **Icon. Pl. Trop.** 8: pl. 716. 1892. Hamer, F., 2001, *Orchidaceae* Juss., in W.D. Stevens *et al*., (*eds*.), **Flora de Nicaragua** 85(2): 1683, Missouri Botanical Garden Press, St. Louis, Missouri, U.S.A. Soto, M., et al., 2007, **Orchids of Mexico**, Digital Catalogue: fig. 0328, México, Instituto Chinoín.

Authors: E. Santiago & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM FALSILOQUUM Rchb.f. **Plate 1330**

EPIDENDRUM FALSILOQUUM Rchb.f., Gard. Chron. 1: 556, 1885.

Type: Without locality data, *Hort.* ***William Bull***. Holotype: W-R 2971! Sketch of flower prepared by L.A. Garay, xerox, AMO!

Hierba terrestre, simpodial, cespitosa, ca. 90-120 cm de alto. **Raíces** basales. **Tallos** sencillos, tipo caña, lateralmente aplanados, erectos, rectos, 70-90 x 0.7-0.9 cm; vainas tubulares, escariosas y fibrosas con el tiempo, 5 x 0.8-0.9 cm. **Hojas** 9-12, alternas, articuladas, erecto extendidas, subcoriáceas; vainas tubulares, finamente estriadas, teñidas de púrpura, 2.5-4 x 0.4-0.9 cm; lámina oblongo-elíptica, acuminada, margen entero, 9.5-20 x 2.5-3.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, paniculada, suberecta, pluriflora, densa, 25-32 cm de largo; pedúnculo lateralmente aplanado, 8 cm de largo; cubierto casi en su totalidad por 2-3 brácteas tubulares, acuminadas, parcialmente imbricadas, 7-10 cm de largo; raquis con 5-10 racimos, extendidos, multifloros; cada uno de ellos con una bráctea basal angostamente triangular, acuminada, 1-3.5 cm de largo. **Brácteas florales** más cortas que el ovario, angostamente triangulares, acuminadas, abrazadoras, 3-16 mm de largo. **Ovario** terete, delgado, no inflado, con escasas papilas diminutas, 17-20 mm de largo. **Flores** numerosas, ca. 180, simultáneas, resupinadas, sépalos y pétalos blanco ocráceo amarillento a blanco purpúreos, algo verdosos en la base, labelo blanco con 3-5 líneas purpúreas sobre las quillas del disco, callos blancos, el ápice de la columna con un par de puntos purpúreos; sin fragancia. **Sépalos** entreabiertos, libres, no ornamentados, muy carnosos, obovado oblanceolados, subobtusos, diminutamente apiculados, 3-nervados, margen entero, 7-8 x 2.5-3 mm; los **laterales** ligeramente oblicuos. **Pétalos** entreabiertos, libres, lineares, subobtusos, 1-nervados, margen apical diminutamente eroso, extendido, 7 x 0.8 mm. **Labelo** unido a la columna, 3-lobado, cordado en la base, 6-7 x 7-9 mm; bicalloso, los callos prominentes, subglobosos; disco provisto de 3 quillas paralelas, carnosas, todas alargadas casi hasta el seno apical; lóbulos laterales suborbiculares, margen entero, 2.7-3 x 3-4 mm; lóbulo medio profundamente bilobado, los lóbulos angostamente oblongos con el ápice redondeado, ligeramente divergentes, margen entero, 2.5-3 x 6-6.5 mm. **Columna** delgada, recta, con un par de dientes diminutos en el ápice, 6 mm de largo. **Clinandrio** reducido, margen entero. **Antera** obovoide, 4-locular. **Polinios** 4, tipo "ala de pájaro". **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando ½ del largo de la cavidad estigmática. **Nectario** poco profundo, penetrando hasta la mitad del ovario, delgado, no inflado, no ornamentado. **Cápsula** no vista.

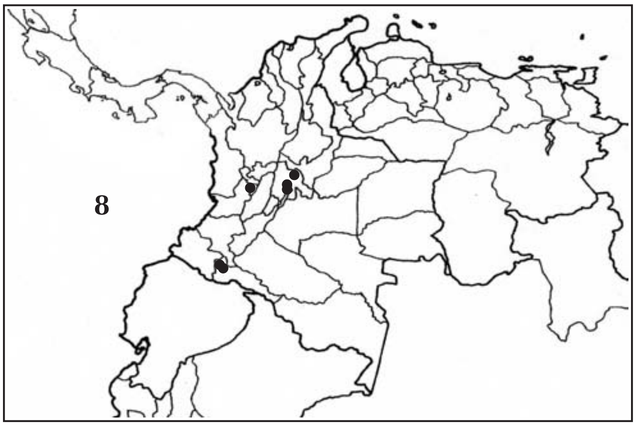
Terrestrial, sympodial, caespitose, tall **herb**. **Roots** basal. **Stems** simple, cane-like, laterally compressed, erect, straight; non-foliar, basal sheaths tubular, scarious, becoming fibrous with time. **Leaves** 9-12, alternate, articulate, sub-erect, spreading, sheaths tubular, minutely striated, tinged purple; blade oblong-elliptic, acuminate. **Spathaceous bract** lacking. **Inflorescence** apical, paniculate, sub-erect, densely many-flowered; peduncle laterally compressed, nearly totally covered by 2-3 tubular, narrowly triangular, acuminate, short bracts. **Floral bracts** shorter than the ovary, narrowly triangular, acuminate, amplexicaul. **Ovary** terete, thin, not inflated, with scarce, minute, papillae. **Flowers** numerous, ca. 180, simultaneous, resupinate, sepals and petals white-ochre-yellow to purple-white, somewhat greenish at the base, lip white with 3 purple lines on the keels of the disc, calli white, apex of the column with a pair of purple dots; without fragance. **Sepals** partly spreading, free, unornamented, very fleshy, obovate-oblanceolate, sub-obtuse, minutely apiculate, 3-veined, margin entire; lateral sepals slightly oblique. **Petals** partly spreading, free, linear, sub-obtuse, 1-veined, apical margin minutely erose, spreading. **Lip** united to the column, 3-lobed, base cordate; bicallose the calli prominent, sub-globose , somewhat laterally compressed; disc provided with 3 parallel, fleshy keels, all nearly reaching the apical sinus; lateral lobes sub-orbicular, margin entire; mid-lobe deeply bilobed, the lobes elongate, oblong, apically rounded, slightly divergent, margin entire. **Column** thin, straight, with a pair of minute teeth at the apex. **Clinandrium-hood** reduced, margin entire. **Anther** obovoid, 4-celled. **Pollinia** 4, "bird-wing" type. **Rostellum** apical, slit. **Nectary** penetrating as far as the middle of the ovary, thin, not inflated, unornamented.

OTHER SPECIMENS: COLOMBIA: Without locality data, 9 V 1885, *Bulls s.n.*, water color, K-L! Ibid. W-R 34605! **Caldas: [Quindío]** alto Río Quindío, Reserva La Montaña, 2600-2900 m, 21 XI 1990, *Bernal 1937*, COL! Salento to "Laguneta", old Quindio trail, 2400-2700 m, 1 VIII 1922, *Killip 9131*, AMES x3! K-L! NY! US! Laguneta, Salento, 3000 m, 15 IV 1942, *Sneidern s.n.*, S! **Cundinamarca:** El Salitre, en carretera Sopo-La Calera/Guasca, 2700 m, 17 III 1996, *Hágsater 11505*, AMO! (spirit) La Calera, 2700 m, 1 X 1992, *Escobar 5199*, AMO x2! (Illustration, AMO!) Chapinero, near Bogota, 2800-2900 m, 18 IX 1917, *Pennell 2003*, NY x2! La Vieja" E de Bogota, ca. 2750 m, 2 III 1968, *Ortíz Valdivieso 50*, HPUJ! Soacha, camino a Santandercito, 5 V 1989, *Villada 1*, BOG! **Distrito Capital:** Bogotá, 8000 ft, without collector data, W-R! Savana de Bogotá, 30 IX 1916, *Dawe 214*, K-L x2! Hills of Chapinero, Sabana de Bogotá, VI 1923, *Pring 220*, MO! Bogotá, *Schultze 165*, US! **Putumayo:** cabeceras del Río Putumayo, cerca de San Francisco, 8 I 1957, *Ospina-Hernández 132*, AMES! (Illustration voucher.) COL! Ibid. *Ospina-Hernández 133*, AMES!

OHTER RECORDS: COLOMBIA: *Mutis*, 1985, [9(3): t. 28], without locality, watercolor published as *Epidendrum laeve* Lindl. **Cundinamarca:** "Chia, *Jay Pfahl s.n.*, digital photo, AMO! **Distrito Capital:** Bogotá, digital photo published as *Epidendrum arnoldi* Schltr. in Gallery of Colombian Orchids (CD), edited by *P. Ortiz V. & C. Uribe*, 2007.

DISTRIBUTION AND ECOLOGY: Known only from the Cordillera Oriental in Colombia around Bogotá, and the Cordillera Central in Quindío and Putumayo; growing at 2700-3000 m altitude. Flowering from March to May, October.

RECOGNITION: *Epidendrum falsiloquum* belongs to the Pseudepidendrum Group is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, apical inflorescence, lacking a spathaceous bract, the petals filiform and the lip usually 3-lobed, with 3 parallel fleshy keels, the apical lobe often bifurcate, and the pollinia "bird-wing" type and Paniculatum Group which has green and white flowers, often parked with purple on the disc of the lip and apex of the column. The species is recognized by the white-ochraceous flowers, with 3 purple lines on the keels of the disc, and a pair of purple dots at the apex of the column, very fleshy sepals 7-8 mm long, the lateral lobes of the lip sub-orbicular, the width between the lateral lobes and between the mid-lobe about equal. *Epidendrum arnoldi* Schltr. has much shorter leaves (ca. 8 cm long), similar sized flowers (sepals 8 mm long), but the flowers are lilac-pink, and the lateral lobes of the lip are dolabriform. *Epidendrum aguirrei* Hágsater has shorter plants, to 42 cm tall, the leaves lanceolate, 6.5-10 cm long, and the flowers green with the lip white with a purple blotch on each side of the disc; sepals 5-6 mm long. *Epidendrum angaritae* Hágsater has large flowers, sepals 17-19 mm long, the flowers olive green with the sepals dorsally brown, the lip white with purple lines of the disc.

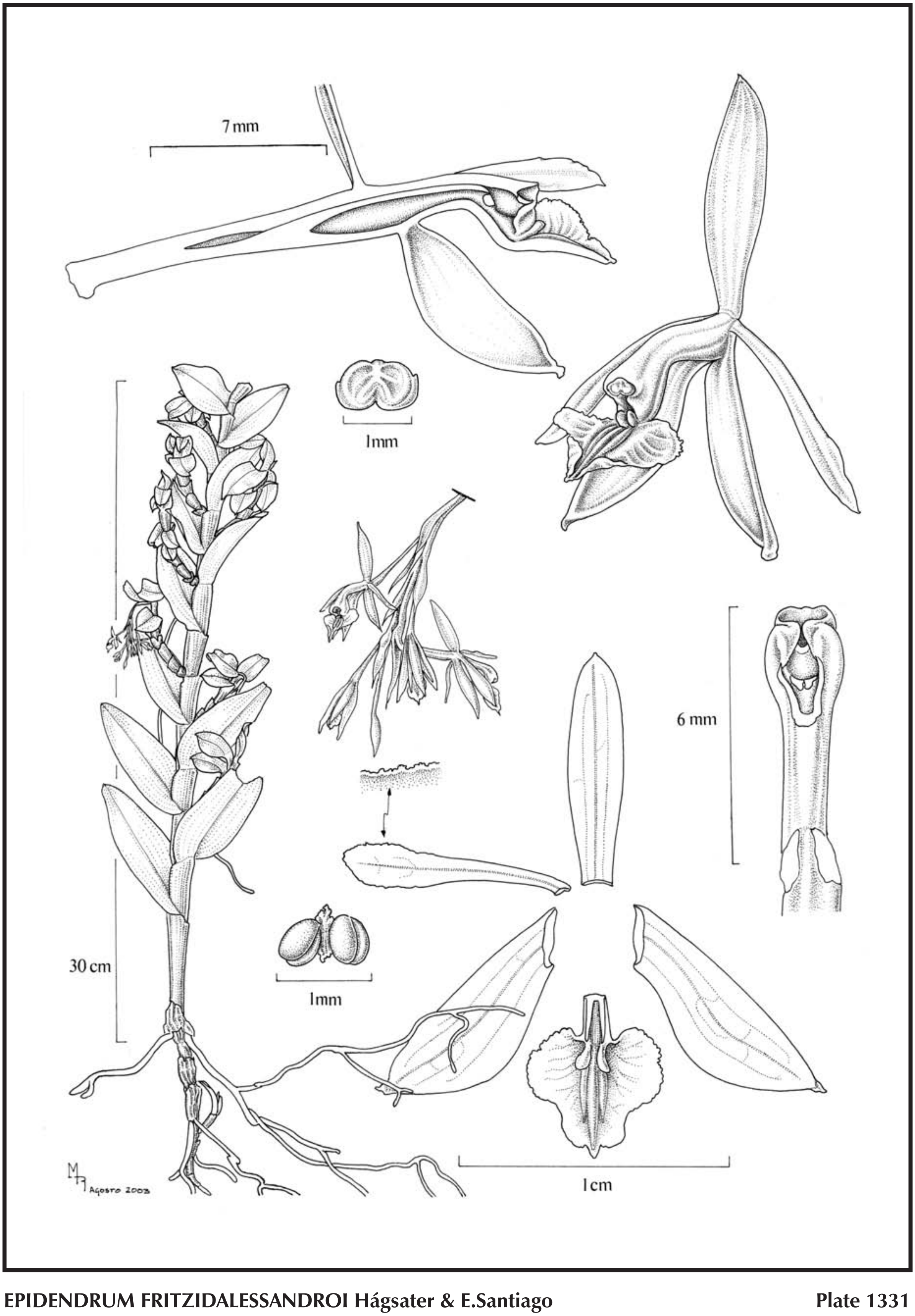


CONSERVATION STATUS: DD. Data deficient. Apparently still found around Bogotá.

ETYMOLOGY: From the Latin *falsi*, false, and *loquor*, speech, in reference to the deceiving aspect of the plant, which at first looked like *Epidendrum verrucosum* Sw., but had flowers similar to those of *E. floribundum* Kunth, according to the author.

REFERENCE: Mutis, José Celestino, 1985, **Flora de la Real Expedición Botánica del Nuevo Reyno de Granada** 9(3)t. 28.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM FRITZIDALESSANDROI Hágsater & E.Santiago **Plate 1331**

EPIDENDRUM FRITZIDALESSANDROI Hágsater *et* E.Santiago, *sp. nov.*

Type: ECUADOR: Zamora-Chinchipe: Beyond the pass, Yangana to Valladolid, 3200 m, 1 April 1985, ***Dennis D'Alessandro 414.*** Holotype: MO! (Illustration voucher.)

Epidendro fritziano Hoehne simile sed ramis brevioribus, floribus succesivis non maculatis, sepalis laevibus et labelli disco cum carinis tribus longis protuberationem carnosam antice callorum non formantibus abhorrens.

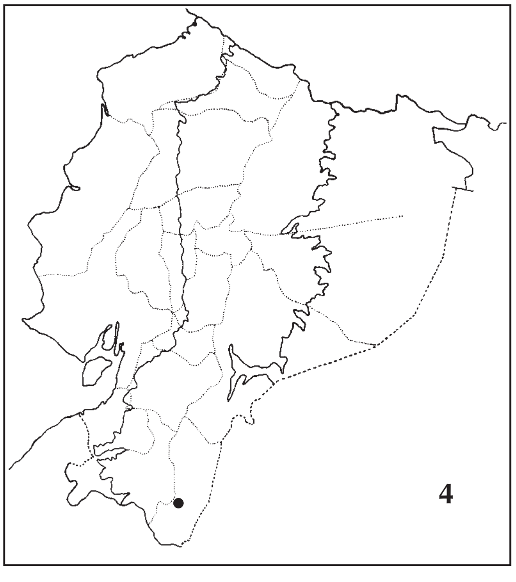
Hierba terrestre, monopodial, ramificada arriba, de más de 30 cm de alto. **Raíces** de la base del tallo principal y ocasionalmente más arriba, 2-2.6 mm de grosor. **Tallos** tipo caña, erectos, rectos, el principal ramificado cuando maduro, 30 x 0.6-0.9 cm, produciendo ramificaciones cortas en la mitad apical del mismo. **Hojas** numerosas distribuidas a casi todo lo largo del tallo principal, generalmente 3 agregadas hacia el ápice de las ramas; vaina tubular finamente estriada en seco, 1-2.5 x 0.5-0.9 cm; lámina oblongo elíptica, ápice subagudo, márgenes extendidos, enteros, 4.3-6.2 x 2.1-2.4 cm, las de las ramas, 1.7-2.5 x 0.9-1.4 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, arqueada nutante, florece una sola vez, 3.5 cm de largo; pedúnculo corto, terete, sin brácteas, 7 mm de largo. **Flores** 6, sucesivas, resupinadas, amarillo verdosas, sin datos de fragancia. **Bráctea floral** de la mitad hasta tan larga como el ovario, triangular, acuminada, 5-11 mm de largo. **Ovario** delgado, terete, no inflado, no ornamentado, 11 mm de largo. **Sépalos** extendidos, libres, oblongos, obtusos, 3-nervados, márgenes enteros; el **dorsal** 8.5 x 2.0 mm; los **laterales** aristados, oblicuos, 9.3 x 3.3 mm. **Pétalos** entreabiertos, libres, linear oblanceolados, redondeados, 1-nervados, margen apical eroso, 8.5 x 1.5 mm. **Labelo** unido a la columna, trilobado, base cordada, margen crenado, 4.8 x 5 mm; bicalloso, los callos alargados, subglobosos, algo divaricados; disco provisto de tres quillas delgadas, bajas, agudas, el par lateral más corto, la central llegando hasta el ápice del lóbulo medio; lóbulos laterales redondeados, 1.6 x 2.8 mm; lóbulo medio trapezoidal, con un apículo prominente en el ápice, 2 x 2.5 mm. **Columna** ligeramente arqueada, delgada, 6 mm de largo. **Clinandrio** corto, margen entero. **Rostelo** apical, hendido, **Lóbulos laterales del estigma** pequeños, de ¼ del largo de la cavidad estigmática. **Nectario** poco profundo, penetrando ca. 1/5 del ovario, liso, ligeramente inflado. **Antera** reniforme, 4-locular. **Polinios** 4, obovoides; caudículas tan largas como los polinios, granulosas. **Cápsula** no vista.

Terrestrial, monopodial branching **herb. Roots** from the base of the main stem and occasionally higher up. **Stems** cane-like, erect, straight, the main stem branching when mature, the short branches produced throughout the apical half of the main stem. **Leaves** numerous distributed throughout the main stem, generally 3 aggregate towards the apex of the branches; sheaths tubular, minutely striated when dry; blade oblong-elliptic, the apex subacute, margins spreading, entire, those on the branches smaller, less than half the size. **Inflorescence** apical, racemose, arching-nutant, flowering only once; peduncle short, terete, smooth. **Flowers** 6, successive, resupinate, yellow-green. **Floral bracts** from half to as long as the ovary, triangular, acuminate. **Ovary** thin, terete, smooth. **Sepals** spreading, free, oblong, obtuse, 3-veined, margins entire, the **laterals** aristate, oblique. **Petals** partly spreading, free, linear-oblanceolate, rounded, 1-veined, apical margin erose. **Lip** united to the column, 3-lobed, base cordate, margin crenate; bicallose, the calli elongate, sub-globose, somewhat divaricate; disc provided with 3 thin, low, acute keels, the lateral pair shorter, the central keel reaching the apex of the midlobe; lateral lobes rounded; midlobe trapezoid, with a prominent apicule at the apex. **Column** slightly arched, thin. **Clinandrium-hood** short, margin entire. **Rostellum** apical, slit. **Nectary** penetrating about 1/5th of the ovary, smooth, slightly inflated. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, caudicles as long as the pollinia, granulose.

OTHER SPECIMENS: None seen.

DISTRIBUTION AND ECOLOGY: Known only from southern Ecuador, terrestrial, at 3200 m altitude. Flowering in April.

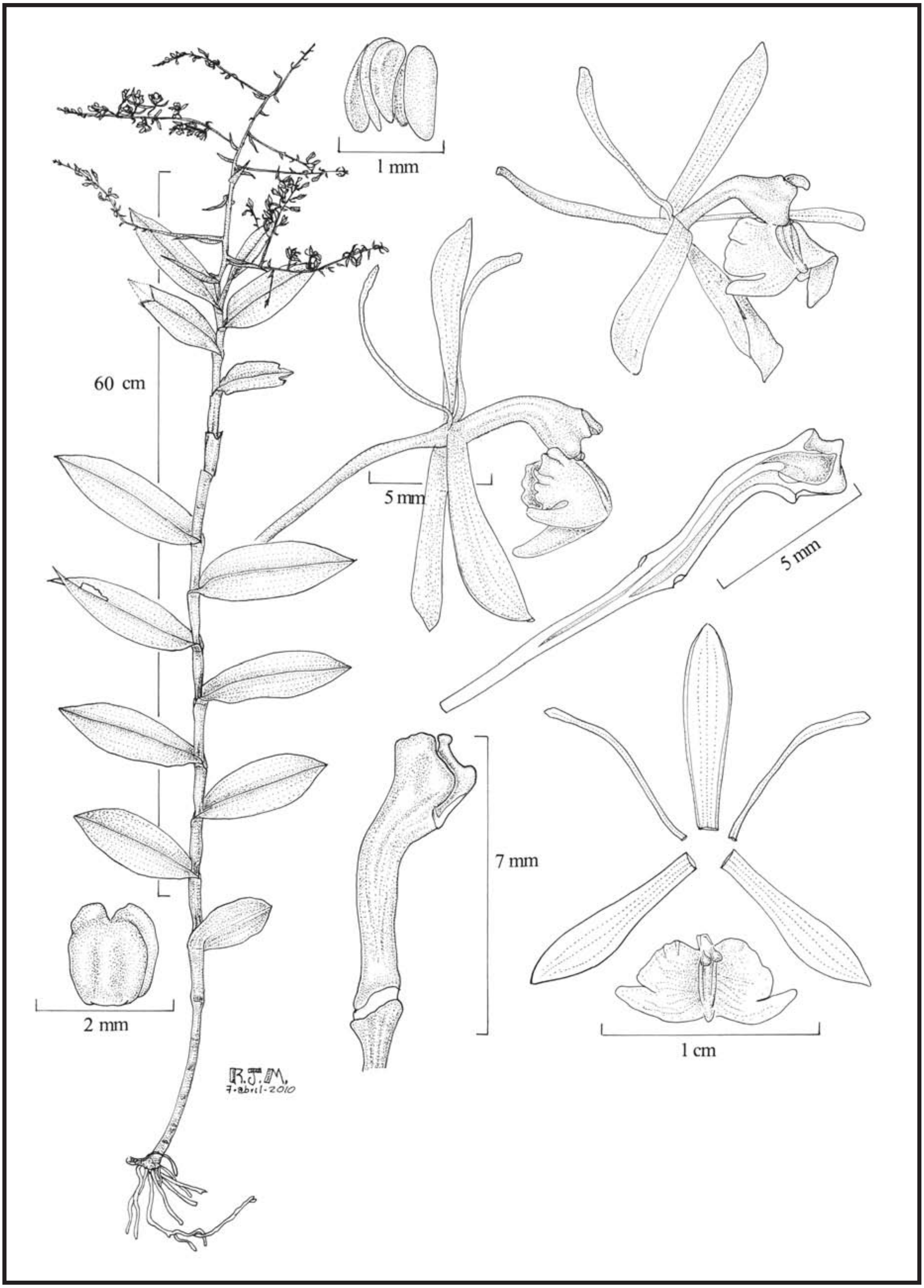
RECOGNITION: *Epidendrum fritzidalessandroi* belongs to the Scabrum Group characterized by the cane-like stems with sub-apical branching, leaves membranaceous, acute-acuminate; and the Fritzianum Subgroup characterized by the branching stems, the branches generally about as long as the main stem, the adpressed leaf sheaths, and 3-lobed lip. The species is recognized by the many simultaneous short, 3-leaved secondary branches, produced from the main stem, about as long as the internodes, few-flowered inflorescence, successive flowers, non-spotted yellow-green flowers, shallowly 3-lobed lip, with a 3-keeled lip. *Epidendrum fritzianum* has striated leaves, some 6-8 on the branches, 30, simultaneous green flowers and ovary with purple-black lines and dots, deeply 3-lobed lip, the cuneate midlobe, and the disc thickened into a thick, rugose protuberance. *Epidendrum molaui* Hágsater & Dodson has a more lax-flowered inflorescence with smaller, greenish flowers, but the disc of the lip is burgundy red and the midlobe of the lip is rectangular. *Epidendrum scabrum* Ruiz & Pavón has a similar habit but the flowers are smaller, successive, yellow, and the lip is deeply 3-lobed. *Epidendrum fritzicardium* Hágsater & E.Santiago has each new successive branch produced from a middle internode of the previous branch and of about the same length, flowers are larger (sepals 17-18 mm long), and the lip is entire, cordiform. *Epidendrum fritzimegalotylosum* Hágsater & E.Santiago has narrower elliptic-lanceolate leaves, immaculate green flowers (only the apex of the column is tinged purple), and the calli ar high, very prominent.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to the similarity of this species collected by Dennis D'Alessandro, to *Epidendrum fritzianum*. D'Alessandro lived for a number of years in Vilcabamba, southern Ecuador and collected and cultivated numerous orchid species there.

Authors: E. Hágsater & E. Santiago **Illustrator: M. López R.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM FRONS-BOVIS Kraenzl. **Plate 1332**

EPIDENDRUM FRONS-BOVIS Kraenzl., Repert. Spec. Nov. Regni Veg. 12(1): 181. 1906.
Type: PERU: Loreto: N von Moyobamba, 1100 m, ***Weberbauer 4639***. Holotype: B, photo: AMES! F! NY! SEL! Isotype: MOL

Hierba simpodial, cespitosa, erecta, de ca. 90 cm de alto. **Raíces** basales, abundantes, carnosas, 2-3 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base a lateralmente aplanados en el ápice, delgados, erectos, rectos, 65-72 x 0.3-0.8 cm; cubiertos en la mitad basal por vainas tubulares no foliares, escariosas, 2.5-4 cm de largo. **Hojas** 15, distribuidas a lo largo del tallo, dísticas, articuladas, erecto extendidas, desiguales en tamaño (las basales y las apicales más pequeñas); vainas tubulares, finamente estriadas, 1.5-4.5 x 0.3-0.8 cm; lámina lanceolada a elíptica, aguda a cortamente acuminada, margen entero, extendido, 3-14 x 1.5-4 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, paniculada, erecta, pauciflora, laxa, 15-25 cm de largo; pedúnculo delgado, lateralmente aplanado, recto, 2-4.5 cm de largo, cubierto por 1 bráctea tubular, aguda, 4 cm de largo; raquis terete, delgado, con 5 racimos subextendidos, paucifloros, cada uno de ellos con una bráctea basal angostamente triangular, acuminada, 1-5 cm de largo. **Brácteas florales** mucho más cortas que el ovario, angostamente triangulares, acuminadas, abrazadoras, 3-4 mm de largo. **Ovario** terete, delgado, no inflado, 10-15 mm de largo. **Flores** ca. 30, simultáneas, resupinadas, de color verde pardo con el labelo blanco, tornándose pardo amarillento; sin datos de fragancia. **Sépalos** extendidos, libres, cuneado obovados, obtusos, 3-nervados, margen entero, extendido, 9-10 x 2-3 mm. **Pétalos** extendidos, libres, filiformes, 1-nervados, margen entero, extendido, 9-10 x 0.5 mm. **Labelo** unido a la columna, incipientemente 3-lobado, fuertemente convexo, ligeramente cordado en la base, ca. 3.5-5 x 8-9 mm; bicalloso, los callos pequeños, subglobosos; disco provisto de 3 quillas paralelas, prominente, carnosas; lóbulos laterales obovados, margen incipientemente crenado; lóbulo medio muy corto, profundamente bilobado, los lóbulos corniformes, divergentes. **Columna** fuertemente arqueada, delgada en la base y gradualmente más ancha en el ápice, el ápice bidentado, 5-7 mm de largo. **Clinandrio** corto, margen entero. **Antera** ovoide, ápice truncado, 4-lócular. **Polinios** 4, el par interior tipo ala de pájaro, los exteriores lateralmente aplanados pero sin llegar a ser tipo ala de pájaro; caudiculas tan largas como los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando 1/3 de la cavidad estigmática. **Nectario** poco profundo, apenas penetrando el perianto. **Cápsula** no vista.

Sympodial, caespitose, erect, tall **herb. Roots** basal, abundant, fleshy. **Stems** simple, cane-like, terete at the base, laterally compressed towards the apex, thin, erect, straight; basal half covered by non-foliar, tubular, scarious sheaths. **Leaves** 15, distributed throughout the stem, distichous, articulate, erect-spreading, unequal in size (the basal and apical leaves smaller); sheaths tubular, minutely striated; blade lanceolate to elliptic, acute to short-acuminate, margin entire, spreading. **Inflorescence** apical, paniculate, erect, lax, few-flowered; peduncle thin, laterally compressed, straight, covered by 1 tubular, acute bract; rachis, terete, thin, formed by 5 sub-spreading, few-flowered racemes, each subtended by an acuminate, tubular bract. **Floral bracts** much shorter than the ovary, narrowly triangular, acuminate, amplexicaul. **Ovary** terete, thin, not inflated. **Flowers** ca. 30, simultaneous, resupinate, green-brown with the lip white, turning yellowish brown. **Sepals** spreading, free, cuneate-obovate, obtuse, 3-veined. **Petals** free, filiform, 1-veined. **Lip** united to the column, 3-lobed, strongly convex, base cordate; bicallose, the calli sub-globose; disc provided with 3, parallel, prominent, fleshy, keels; lateral lobes obovate, margin incipiently crenate; mid-lobe very short, deeply bilobed, the lobes horn-like, divergent. **Column** strongly arching, thin towards the base, gradually thickened towards the apex, apex bidentate. **Rostellum** apical, slit. **Clinandrium-hood** short, margin entire. **Anther** ovoid, apex truncate, 4-celled. **Pollinia** 4, the inner pair "bird-wing" type, the outer pair laterally compressed without being "bird-wing" type. **Rostellum** apical, slit. **Nectary** shallow, slightly penetrating the ovary.

OTHER SPECIMENS: PERU: Loreto: Pumayacu, between Balsapuerto and Moyobamba, 600-1200 m, VIII 1933, *Klug 0.10*, AMES! US! Ibid. *Klug 0.11*, AMES x2! (Illustration voucher.)

OTHER RECORDS: PERU: San Martín: Moyobamba, *Moron s.n.*, digital imagen, AMO!

DISTRIBUTION AND ECOLOGY: Known only from the type locality, north of Moyobama, Peru, growing at 600-1200 m altitude. Flowering August to September.

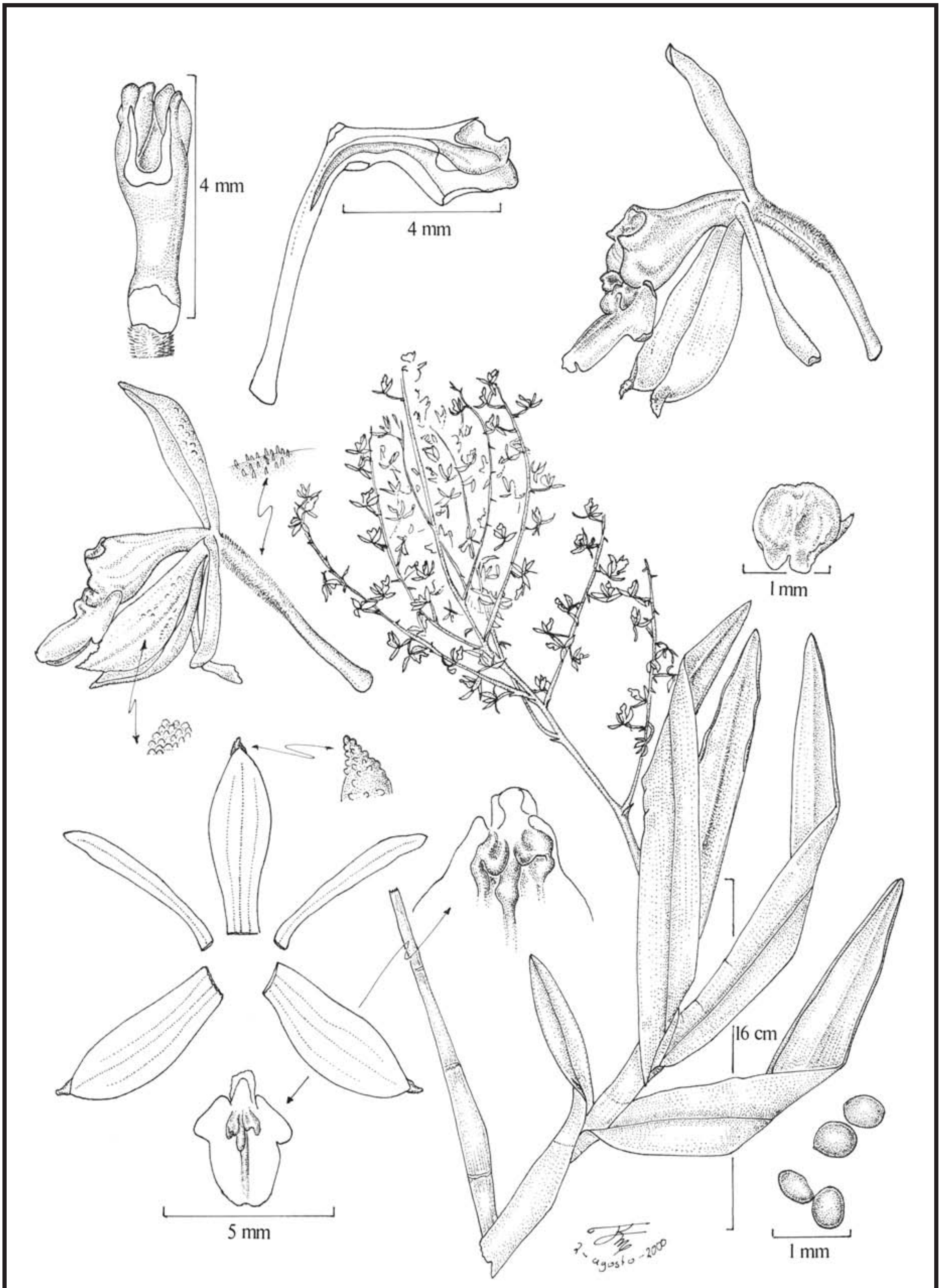

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RECOGNITION: *Epidendrum frons-bovis* belongs to the Pseudepidendrum Group is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, apical inflorescence, lacking a spathaceous bract, the petals filiform and the lip usually 3-lobed, with 3 parallel fleshy keels, the apical lobe often bifurcate, and the pollinia "bird-wing" type and Paniculatum Group which has green and white flowers, often marked with purple on the disc of the lip and apex of the column. The species has tall plants, to 90 cm, lanceolate to elliptic leaves 3-14 x 1.5-4 cm; brownish green flowers, the lip white, sepals 9-10 mm long, the column strongly arched, lip 3-lobed, ca. 3.5-5 x 8-9 mm, mid-lobe very short, with a pair of corniform lobes. *Epidendrum patulipetalum* Schltr. Reported from the same area has thin stems, ca. 2 mm thick, linear-lanceolate leaves 5-7 x 0.5-0.7 cm, small flowers, sepals 5 mm long, and the lip slightly 3-lobed, 1.5 x 3 mm. *Epidendrum capricornu* Kraenzl. has large flowers (sepals 14-15 mm long), purple-brown outside, the inner surface pale yellow, lip pink-salmon, the apical lobes of the lip are straight and somewhat upright, the column straight and grows at 1750-2750 m altitude.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *frons-bovis*, like the forehead of a bull, in reference to the mid-lobe of the lip, with the lobes reminiscent of a bull's horns.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM GABANENSE Hágsater & E.Santiago **Plate 1333**

EPIDENDRUM GABANENSE Hágsater *et* E.Santiago, *sp. nov.*

Type: PERU: Puno: Carabaya, Valle de S. Gabán, ca. 13°50'S 70°15'W, epífita, 1100 m, 7 febrero 1967, ***C. Vargas C. 18853.*** Holotype: AMES! (Illustration voucher)

Epidendro pubifloro C.Schweinf. simile sed floribus minoribus subtilioribusque, petalis angustioribus lineari-oblanceolatis, labelli lobulis lateralibus brevibus rotundatis, anthera sphaerica cum appendicibus apicalibus brevibus rotundatis binis distinguibile.

Hierba epífita, simpodial, cespitosa, de 60 cm de alto. **Raíces** no vistas. **Tallos** sencillos, tipo caña, aparentemente ligeramente fusiformes y lateralmente aplanados, rectos, de ca. 20 x 0.3-0.5 cm. **Hojas** 4-5, agregadas hacia el ápice del tallo, alternas, articuladas, generalmente iguales entre sí excepto la basal reducida; vainas tubulares, finamente estriadas en seco, 1-3.5 x 0.6-0.9 cm; lámina lanceolada, bilobada, con una quilla dorsal, margen entero y ligeramente revoluto cuando seca, lisa, [5.2]11.5-17.5 x [1.1]1.3-2.1 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, paniculada (con las ramas apicales ligeramente arqueadas y erectas, las inferiores algo extendidas), erecta, 22-26 cm de alto; pedúnculo delgado, lateralmente aplanado, 3-5.5 cm de largo, provisto en ocasiones en su parte media de una bráctea semejante a las brácteas basales de las ramas, triangular, aguda, 6 mm de largo. **Brácteas florales** mucho más cortas que el ovario, triangulares, agudas, 1-2 mm de largo. **Flores** ca. 150, simultáneas, resupinadas, pequeñas, delicadas, blancas, fragancia no registrada. **Ovario** delgado, terete, no inflado, pubescente, 5-7 mm de largo. **Sépalos** libres, redondeados, con una quilla dorsalmente papilosa, margen entero, membranáceos, 3-nervados; el **dorsal** extendido, espatulado oblanceolado, 5.7-7.0 x 1.4-1.8 mm; los **laterales** descendentes, angostamente elípticos, 5.6-7.2 x 1.9-2.1 mm. **Pétalos** extendidos, libres, linear oblanceolados, falcados, redondeados, 1-nervado, margen entero, membranáceos, 5.4-6.0 x 0.7 mm. **Labelo** unido a la columna, trilobado, base angostamente cordada, 3.2 x 2.8 mm; bicalloso, callos basales, pequeños, laminares, cuniculados; disco provisto de tres carinas cortas y engrosadas frente a los callos, la central disminuyendo hacia el ápice; lóbulos laterales casi de la mitad de largo del labelo, semiovados, redondeados, margen entero; lóbulo medio elipsoide, ápice redondeado a bilobado, margen entero. **Columna** corta, recta, delgada, 4 mm de largo. **Clinandrio** corto, entero. **Antera** esférica, apicalmente bífida, los apéndices cortos y redondeadas, 4 locular. **Polinios** 4, ovoides lateralmente aplanados. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de 1/3 de largo de la cavidad estigmática. **Nectario** penetrando ¼ del ovario, no ornamentado. **Cápsula** no vista.

Epiphytic, sympodial, caespitose **herb. Stems** simple, cane-like, apparently somewhat fusiform, and slightly laterally flattened, straight. **Leaves** 4-5, aggregate towards the apex of the stem, alternate, articulate, about equal except for the reduced basal leaf; sheath tubular, minutely striated when dry; blade lanceolate, bilobed, with a dorsal keel, margin entire and slightly revolute when dry, smooth. **Inflorescence** apical, paniculate, erect, the apical branches arching and erect, the lower ones somewhat spreading; peduncle thin, laterally compressed, provided towards the middle with a small, triangular, acute bract. **Floral bracts** much shorter than the ovary, triangular, acute. **Flowers** ca. 150, simultaneous, resupinate, small, delicate, white. **Ovary** thin, terete, pubescent. **Sepals** free, rounded, dorsally papillate keel, margin entire, membranaceous, 3-veined; **dorsal sepal** spreading, spatulate-oblanceolate; **lateral sepals** descending, narrowly elliptic. **Petals** spreading, free, linear-oblanceolate, falcate, rounded, margin entire, membranaceous, 1-veined. **Lip** united to the column, 3-lobed, case narrowly cordate; bicallose, the calli basal, small, laminar, cuniculate, disc provided with 3 short, rounded keels, thickened in front of the calli, the mid-keel diminishing to the apical sinus; lateral lobes about half the length of the lip, semi-ovate, rounded, margin entire; mid-lobe ellipsoid, apex rounded to slightly bilobed, margin entire. **Column** short, straight, thin. **Clinandrium-hood** short, entire. **Anther** spherical, bifid, the apical appendages short and rounded, 4-celled. **Pollinia** 4, ovoid, laterally compressed. **Rostellum** apical, slit. **Nectary** penetrating $1/4^{th}$ of the ovary, smooth.

OTHER SPECIMENS: PERU: La Convención: Distr. Santa Ana, Poromate, 1050 m, 17 III 2004, *Valenzuela 2946*, AMO! CUZ, MO, USM. Distr. Santa Teresa, Paltaychayoc, 1580 m, 16 III 2004, *Huamantupa 4110*, AMO! CUZ, MO, USM. **Puno:** Carabaya: Valley of San Gabán, 2000-2700 m, 9 II 1967, *Vargas 28976*, AMES! CUZ!

DISTRIBUTION AND ECOLOGY: Ranging along the Amazon slope of south-eastern Peru, between 1000 and 2000 m altitude in the Valleys of the San Gabán and Urubamba rivers, in the Departments of Puno and Cusco.

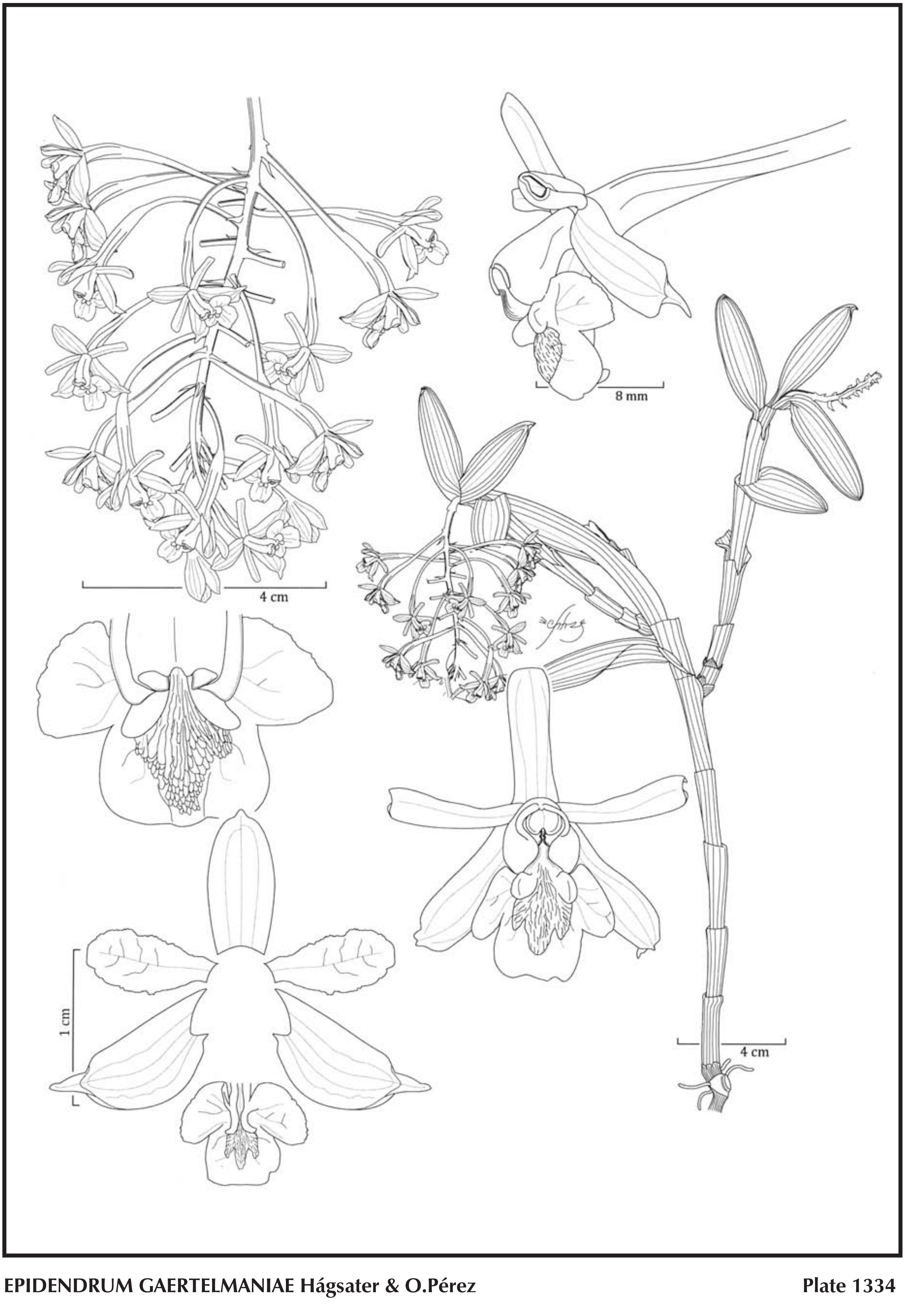


RECOGNITION: *Epidendrum gabanense* belongs to the Amblostomioides Group the Amblostoma Group which is characterized by the sympodial, caespitose habit, the thinly fusiform stems with narrow, apically bilobed, sub-coriaceous leaves distributed along the apical half of the stems, an often large, apical, erect, paniculate inflorescence, the flowers greenish-yellow to white, the ovary and the sepals usually dorsally pubescent, and the lip 3-lobed. The species is recognized by the short-pubescent ovaries, small, delicate flowers, sepals 5.6-7.2 mm long, dorsally papillate, the shallow, rounded, lateral lobes; the anther with a pair of short, rounded appendages at the apex. It is similar to *E. pubiflorum* which has larger, heavier flowers (sepals 9-11 mm long), the lip deeply 3-lobed, with the lateral lobes obliquely dolabriform-ovate, acute, the calli and mid-keel forming three parallel keels; the anther with a pair of apical, acuminate appendages. *Epidendrum ancirotylosum* Hágsater & E.Santiago also has larger, heavier flowers, but the calli are cuniculate and have an anchor-shaped thickening in front. The plant is very similar to *Amblostoma cernua* Rchb.f., which is vegetatively very similar, but has a deeply 3-lobed lip with similar, narrow, oblong lobes.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to the locality where the type was collected, San Gabán, Department of Puno, Province of Carabaya.

Authors: E. Hágsater & E. Santiago **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM GAERTELMANIAE Hágsater & O.Pérez **Plate 1334**

EPIDENDRUM GAERTELMANIAE Hágsater *et* O.Pérez, *sp. nov.*

Type: COLOMBIA: Valle de Cauca; Municipio El Cerrito, Tenerife; Páramo "Pan de Azúcar" [Páramo Las Hermosas], 3° 45' N, 76° 5' W, ca. 15° C, 3800 m, 6 de noviembre de 2009, ***Oscar A. Pérez E., Nora Mesa & Milton Valencia 440***. Holotype: VALLE!; Isotypes: COL! CUVC 1/2! CUVC 2/2! (Illustration voucher). VALLE! Digital images of fresh material, AMO!

Epidendro brevicernuo Hágsater & Dodson simile sed floribus colore purpureo viride, disco calloque viride, vel roseo ambusto, disco calloque luteo, petalis uninervatis margine irregulariter eroso, labelli lobulo medio latiore quam longiore et disco spissitatem rugosam tridentatam ferenti distinctum.

Hierba rupícola, de crecimiento monopodial, ramificada en la parte distal, las ramificaciones menores que el tallo principal, 150 cm de alto. **Raíces** basales del tallo principal, raramente alguna de una ramificación, gruesas, carnosas, blanquecinas, 3.5 mm de grosor. **Tallos** tipo caña, teretes, rectos, ramificados en la parte superior; el principal de *ca.* 1 m de alto, 6.5-8 mm de grosor, las ramificaciones 9-18 x 0.5-0.8 cm. **Hojas** numerosas distribuidas a lo largo del tallo principal, y 5 en la mitad apical de las ramas, alternas; vainas tubulares, estriadas, 1.1-3.3 x 0.55-0.8 cm; lámina elíptica a elíptico lanceolada, ápice bilobado, coriácea, lisa, verde, con cuatro pares de nervaduras secundarias, margen entero, las de los tallos principales mayores, 3.2-6.7 x 0.8-1.6 cm, las de los tallos secundarios 4.1-5.3 x 1.0-1.35 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, arqueado nutante, subesférica, pauciflora, laxa, 7.1-9.4 cm de largo, pedúnculo terete, arqueado, no ornamentado, sin brácteas, raquis recto. **Brácteas florales** triangulares, acuminadas, mucho mas cortas que el ovario, de 3-4 mm de largo. **Flores** 20-27, simultaneas, resupinadas, de color púrpura verdoso oscuro, callos y disco verde o flores rosa quemado, amarillento hacia la base, disco y callos amarillos; sin datos de fragancia. **Ovario** delgado, terete, no inflado, con surcos longitudinales que se desvanecen antes de su parte media, de 17-30 mm de largo. **Sépalos** libres, carnosos, glabros, ápice redondeado, márgenes enteros, revolutos; el **dorsal** extendido, elíptico, 3-nervado, diminutamente apiculado, apículo obtuso, 9.4 x 4.1 mm; los **laterales** entreabiertos, oblongos, oblicuos, prominentemente aristados, 4-nervados, margen entero, revoluto; 12 x 5 mm. **Pétalos** libres, extendidos, algo carnosos, espatulados, 1-nervados, la nervadura cortamente ramificada a todo lo largo, ápice redondeado, margen eroso, fuertemente revoluto; 8.3 x 3.8 mm. **Labelo** unido a la columna, trilobado, base cordada, 7 x 8.3 mm, bicalloso, callos prominentes, ligeramente divaricados, disco con un engrosamiento tridentado, prominente, rugoso, ancho, alargado hasta cerca del ápice del lóbulo medio; lóbulos laterales más cortos que el lóbulo medio, oblicuamente ovados, margen ligeramente eroso en los bordes distales, 3.6 x 4.1 mm; lóbulo medio rectangular, en el ápice truncado, diminutamente apiculado, margen entero, 3.6 x 4.7 mm. **Columna** gruesa, recta, el ápice con un par de alas incipientes redondeadas, 5-6 mm de largo. **Clinándrio** prominente, sin sobrepasar el ápice de la columna, margen ligeramente eroso. **Antera** reniforme, microscópicamente papilosa en la superficie exterior, 4 locular, 2 x 1.3 mm. **Polinios** 4, lenticulares, *ca.* 0.8 mm de diámetro. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma, nectario** y **capsula** no vistos.

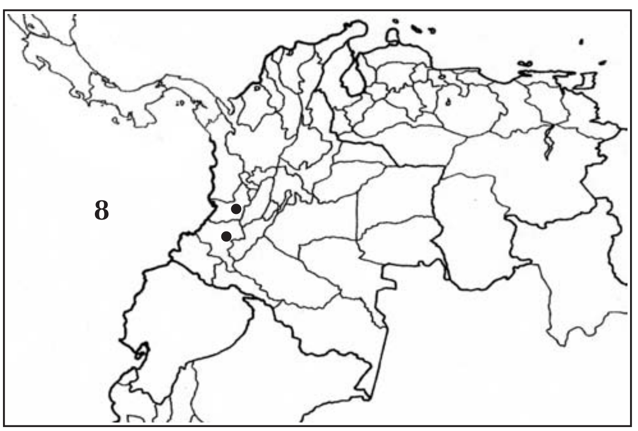
Rupicolous, monopodial, tall **herb**, branching distally, the branches shorter than the main stem. **Roots** basal from the main stem, rarely from a branch, thick, fleshy, white. **Stems** cane-like, terete, straight, branching sub-apically; the main stem tall, the branches much shorter. **Leaves** numerous along the main stem, 5 distributed along the apical half of the branches, alternate; sheaths tubular, striated; blade elliptic to elliptic-lanceolate, apex bilobed, coriaceous, smooth, green, with 4 pairs of secondary veins, margin entire, the leaves of the main stem larger than those of the branches. **Inflorescence** apical, racemosa, arching-nutant, sub-spherical, lax, few-flowered, peduncle terete, arching, unornamented, without bracts, rachis straight. **Floral bracts** triangular, acuminate, much shorter than the ovary. **Flowers** 20-27, simultaneous, resupinate, dark purple–green, the calli and disc green or burnt pink flowers, yellow towards the base, disc and calli yellow. **Ovary** thin, terete, not inflated, with longitudinal grooves that disappear below the middle. **Sepals** free, glabrous, fleshy, glabrous, margins entire, revolute, apex rounded, the dorsal sepal spreading, elliptic, 3-veined, minutely apiculate, apicule obtuse; lateral sepals partly spreading, oblong, oblique, prominently awned, 4-veined. **Petals** free, spreading, somewhat fleshy, spatulate, 1-veined, the vein short branched throughout, apex rounded, margin erose, strongly revolute. **Lip** united to the column, 3-lobed, base cordate, bicallose, the calli prominent, slightly divaricate, disc with a prominent, 3-dentate, rugose, wide thickening, reaching nearly the middle of the mid-lobe; lateral lobes shorter than the mid-lobe, obliquely ovate, apical margin slightly erose; mid-lobe rectangular, apex truncate, minutely apiculate, margin entire. **Column** thick, straight, the apex with a pair of short, rounded wings. **Clinandrium-hood** prominent, without surpassing the body of the column, margin slightly erose. **Anther** reniform, microscopically papilose in front, 4-celled. **Pollinia** 4, lentil-shaped. **Rostellum** sub-apical, slit.

OTHER SPECIMENS: **COLOMBIA: Cauca:** Cordillera Central, Pan de Azúcar, 3500–3700 m, 16 VI 1922, *Pennell 7043*, AMES!(illustration, AMO!) NY! US!

OTHER RECORDS: COLOMBIA: Cauca: Puracé, San Juan, 3300 m, 2004, image published as Sp074 {POV}Galería de Orquídeas de Colombia, (Ortiz, 2007).

DISTRIBUTION AND ECOLOGY: So far the species is known only for the western slope of the Cordillera Central in southern Colombia, Valle del Cauca and Cauca. Lithophytic at 3500- 3800 m, growing together with *Epidendrum cernuum* Kunth in the transition of a sub-paramune forest and paramune vegetation dominated by *Puya* and *Espeletia* species, and codominated by *Hypericum* shrubs and many species of grasses.

RECOGNITION: *Epidendrum gaertelmaniae* belongs to the Cernuum group, characterized by the monopodial, cane-like stems with subapical branching, the branches much shorter than the main stem, coriaceous to sub-coriaceous, bilobed leaves and fleshy resupinate flowers with the lip 3-lobed. The species has dark purple–green flowers, the calli and disc green or burnt pink sepals and petals, the base somewhat yellowish, and yellow disc and calli, the lateral sepals are prominently awned, the petals spatulate, 1-veined, apex rounded and margin erose, and the lateral lobes of the lip shorter than the mid-lobe, obliquely ovate, apical margins minutely erose, and the larger mid-lobe is rectangular, with the apex truncate minutely apiculate. *Epidendrum cernuum* Kunth has a long, cylindrical, many-flowered inflorescence with greenish yellow to yellowish brown, simultaneous, delicate flowers, the lateral sepals are prominently aristate, the lateral lobes of the lip obliquely ovate, much smaller than the mid-lobe which is sub-rectangular, longer than broad with the apex truncate and minutely apiculate; the disc has 3 low keels. *Epidendrum brevicernuum* Hágsater & Dodson has shorter, lax, few-flowered inflorescences, greenish white to green flowers, petals narrowly oblanceolate, with entire margin, the lateral lobes of the lip as large as the mid-lobe, and the apex of the mid-lobe emarginate, not apiculate; the lip has a wide, rugose thickening which reaches the apex of the mid-lobe.

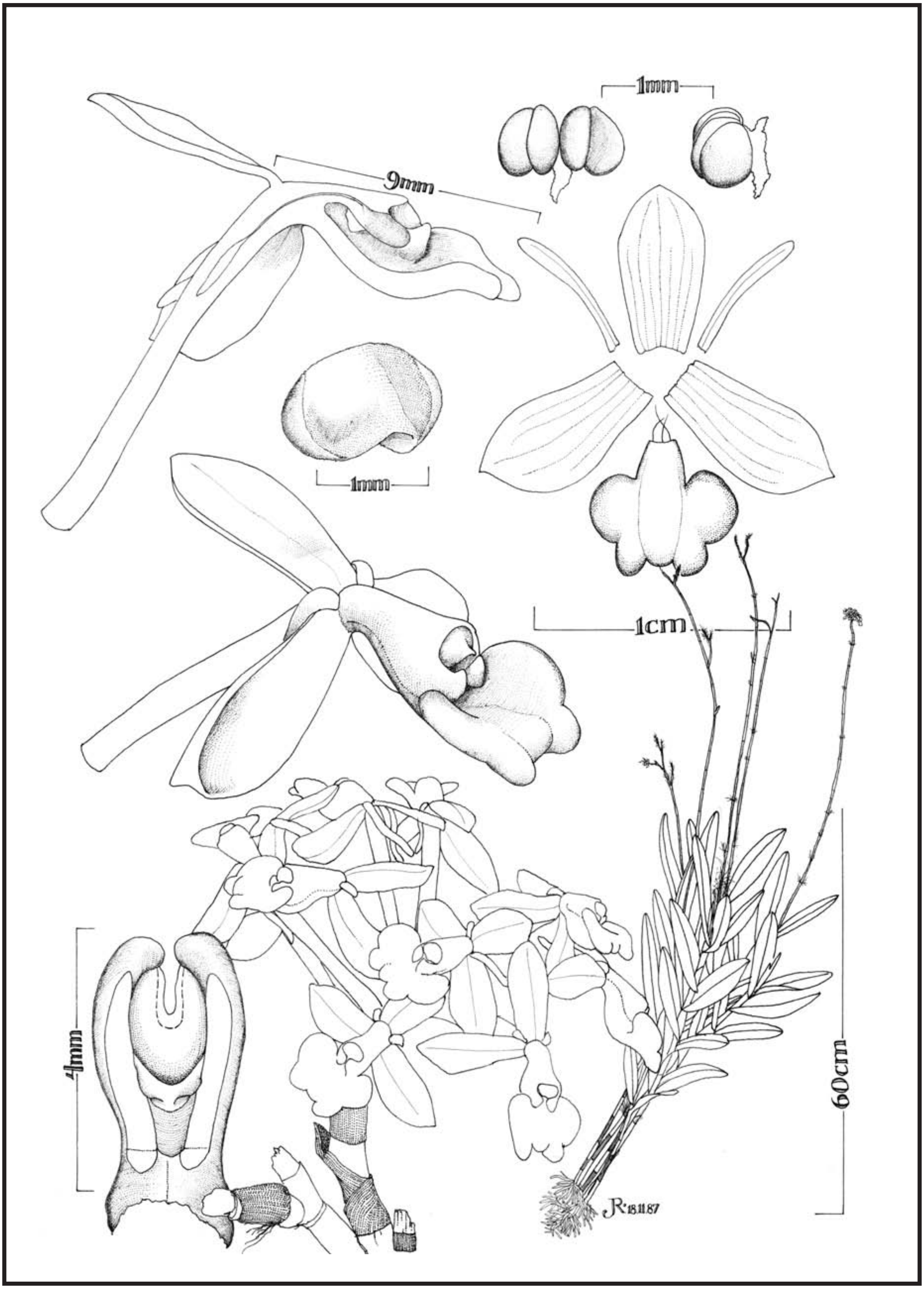


CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: Named after Terry Lynn Gartelman-González, an orchid-lover, who has worked for many years selflessly in the conservation of a cloud-forest relicts and orchids from the corregimiento of Dapa, municipality of Yumbo.

REFERENCES: Hágsater, E., & C.H. Dodson, 2001, *Epidendrum brevicernuum*, in E. Hágsater & L. Sánchez S. (eds.) **Icon. Orchid. (Mexico)** 4: pl. 421. Ortiz V., Pedro & Carlos Uribe V., 2007, **Galería de Orquídeas de Colombia,** CD, Da Vinci Editores, Bogotá, Colombia.Santiago, E., & E. Hágsater, 2009, *Epidendrum cernuum*, in E. Hágsater & L. Sánchez S. (eds.) **Icon. Orchid. (Mexico)** 12: pl. 1218.

Authors: E. Hágsater & O. Pérez **Illustrator: O. Pérez** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM GALEOTTIANUM A.Rich. & Galeotti **Plate 1335**

EPIDENDRUM GALEOTTIANUM A.Rich. & Galeotti, Ann. Sci. Nat. Bot. sér. 3. 3: 21. 1845.

Type: MEXICO, ***Galeotti 5194***. Holotype: W-R 16999! Color drawing W-R 19628! Xerox copy AMES 26029!

Synonyms: Epidendrum ensatum A.Rich. & Galeotti, Ann. Sci. Nat. Bot. sér. 3. 3: 22. 1845. Type: MEXICO, ***Galeotti 5152***. Holotype: P! Isotypes W-R 15404! W-R 16997!

Epidendrum schenckianum Kraenzl., Repert. Spec. Nov. Regni Veg. 7: 114. 1909. Type: MEXICO, Aus dem Gebiet von Zacuapan. Blühte im Grossherzohl. botan. Garten zu Darmstadt, ***C. A. Purpus* s.n.** Holotype: HBG!

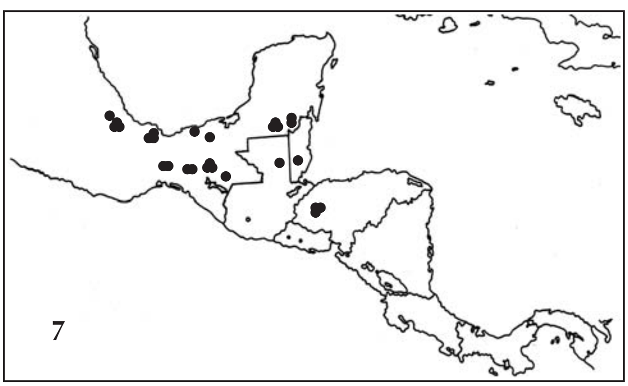
Hierba epífita o rupícola, simpodial, cespitosa, (25) 37-100 cm de alto incluyendo la inflorescencia. **Raíces** basales, carnosas, gruesas, 2-4 mm de grosor. **Tallos** sencillos, tipo caña, ancipitosos, rectos, 20-50 x 0.4-1.6 cm. **Hojas** 4-10, dísticas, distribuidas a lo largo del tallo o en los dos tercios apicales del tallo, verde oscuro en ocasiones moradas; vaina foliar tubular, ancipitosa, estriada en seco, 1.5-6 cm de largo, lámina angostamente elíptica a oblongo lanceolada, conduplicada en la base, obtusa a retusa, mucronada, coriácea, carina dorsal evidente, (3) 4.5-23 x 2-4.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, el racimo subcorimboso, denso, floreciendo durante varios años consecutivos del mismo escapo, dando la apariencia de una inflorescencia pluriracemosa con el tiempo, 15-65 cm de largo; pedúnculo largo, ancipitoso, 12-33 cm de largo; cubierto por 3-10 brácteas imbricadas, tubulares, lateralmente comprimidas, oblongas, agudas a obtusas, 3-6 x 0.2-0.6 cm. **Brácteas florales** más cortas que el ovario, abrazadoras, triangular ovadas, acuminadas, 2-4 x 1-2 mm. **Flores** 7-15 por racimo, simultáneas, resupinadas, sépalos y pétalos pardo verdosos, raramente verdes, labelo y ápice de la columna morado vivo, con aspecto aterciopelado, columna verde en la base, fragancia herbáceo afrutada (recuerda al plátano), vespertina. **Ovario** no inflado, terete, escasa y diminutamente papiloso, 10-18 mm de largo. **Sépalos** reflexos, libres, obtusos, mucronados, subcoriáceos, 3-5 nervados, margen entero, extendido, 5.5-8 x 2.8-4 mm; el **dorsal** anchamente oblanceolado, diminutamente papiloso dorsalmente; los **laterales** en ocasiones entreabiertos, oblicuamente obovados, obtusos, lisos, 5-8 x 2.9-4.5 mm. **Pétalos** fuertemente reflexos, linear oblanceolados, obtusos, 1-nervados, margen entero, extendido, 5-7 x 0.5-1 mm. **Labelo** unido a la columna, trilobado, ligeramente cóncavo, carnoso, margen entero, extendido; ecalloso, unicarinado, la carina evidente, carnosa y amplia, prolongándose hasta el seno apical, 3.3-5.4 x 4.2-6.5 mm; lóbulos laterales semiorbiculares a semiovados, 1.5-2.5 x 2-3.2 mm; lóbulo medio formando dos lóbulos semiorbiculares, con un seno amplio, donde termina la quilla central redondeada, 1-2.2 x 3-4 mm. **Columna** arqueada, obcónica, delgada, 4-6 mm de largo. **Clinandrio** corto, margen entero. **Antera** obreniforme, ápice cónico, 4-locular. **Polinios** 4, ovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, de longitud similar a la de los polinios; viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** evidentes, de casi un tercio de la longitud de la cavidad estigmática. **Nectario** corto, penetrando hasta la zona de inserción de los segmentos del perianto. **Cápsula** no vista.

Epiphytic or rupiculous, simpodial, caespitose **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, ancipitose, straight. **Leaves** 4-10, distichous, distributed throughout the stem, deep green to purple; foliar sheaths ancipitose, striated when dry; blade narrowly elliptic to oblong-lanceolate, conduplicate at the base, obtuse to retuse, mucronate, coriaceous, with an evident dorsal keel. **Inflorescence** apical, racemose, the raceme sub-corymbose, dense, producing new racemes over several years from the nodes of the peduncle, thus pluriracemose in time; peduncle elongate, ancipitose, covered by 3-10 imbricating, tubular bracts, laterally compressed, oblong, acute to obtuse. **Floral bracts** shorter than the ovary, triangular-ovate, acuminate. **Flowers** 7-15 per raceme, simultaneous, resupinate, sepals and petals greenish brown, rarely green, lip and apex of the column bright purple, mat, velvet-like, base of the column green; evening fragrance herbaceous, fruit-like (reminiscent of bananas). **Ovary** not inflated, terete, scarcely and minutely papillose. **Sepals** reflexed, free, obtuse, mucronate, sub-coriaceous, 3-5-veined, margin entire, spreading, the dorsal sepal widely oblanceolate, dorsally minutely papillose, lateral sepals obliquely obovate, obtuse, smooth. **Petals** strongly reflexed, linear-oblanceolate, obtuse, 1-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, slightly concave, fleshy, margin entire, spreading; ecallose, one-keeled, the keel evident, fleshy, wide, reaching the apical sinus; lateral lobes semi-orbicular to semi-ovate; mid-lobe forming two semi-orbicular lobes, with a wide sinus where the fleshy, central keel ends. **Clinandrium-hood** short, margin entire. **Anther** obreniform, apically conical, 4-celled. **Pollinia** 4, ovoid, laterally compressed, sub-equal; caudicles soft and granulose, as long as the pollinia; viscidium semi-liquid, transparent. **Rostellum** apical, slit. **Nectary** short, penetrating up to the perianth.

OTHER SPECIMENS: See appendix.

DISTRIBUTION AND ECOLOGY: In eastern Mexico, bordering the Gulf of Mexico, (Veracruz, Oaxaca, Chiapas, Tabasco & Campeche) and along the Caribbean lowlands in Mexico (Quintana Roo), Belize, Guatemala, El Salvador? Honduras and Nicaragua. Epiphytic or rupiculous, from sea level to 2100 m altitude in high tropical forest and cloud forest. Flowering from March to October.

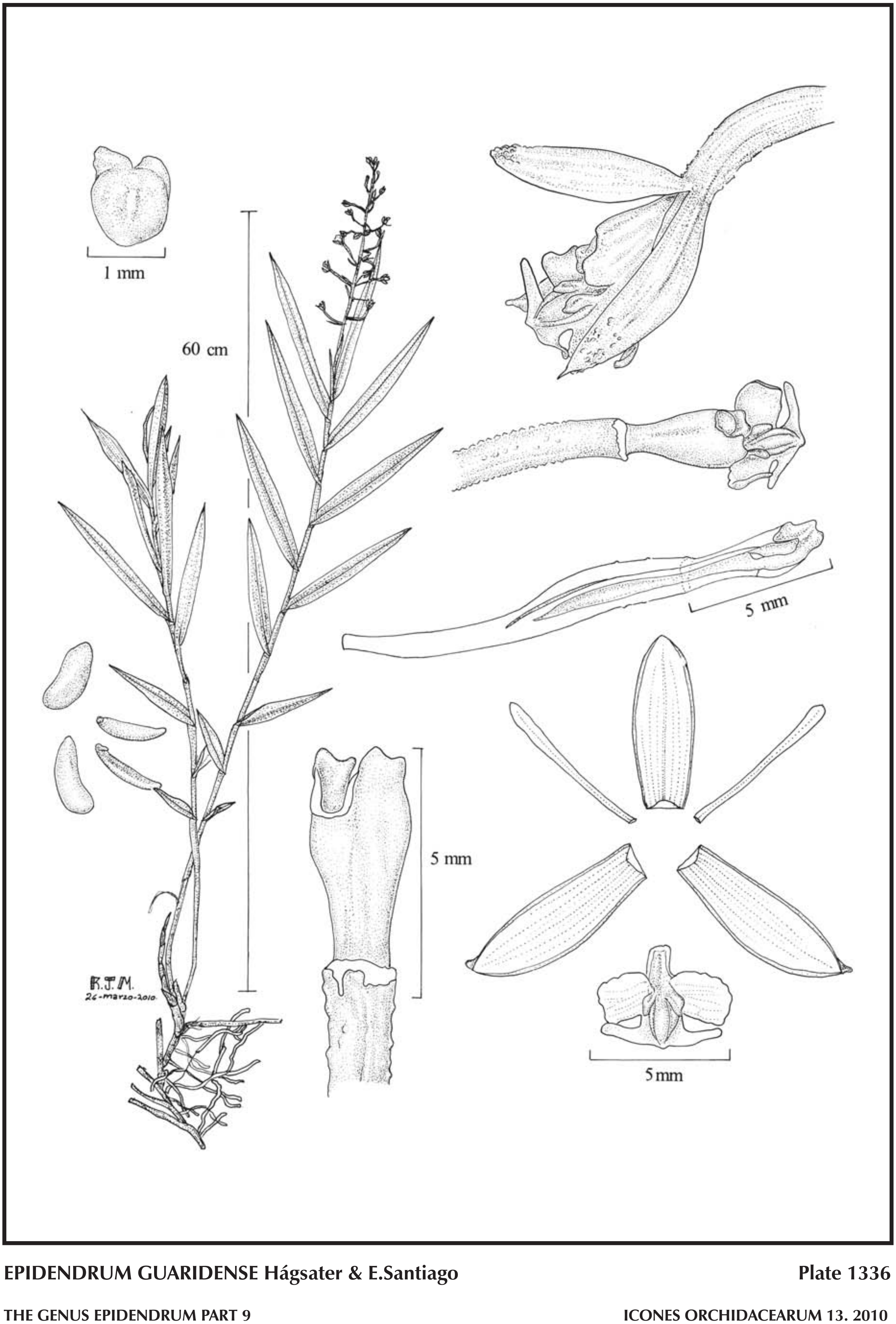
RECOGNITION: *Epidendrum galeottianum*, belongs to the Anceps Group, which is recognized by the simple stems, generally elongate, compound racemose inflorescence producing new successive racemes with time, fleshy flowers, filiform to narrowly oblanceolate petals; and the Anceps Subgroup which has short and sub-corymbose racemes. The species is recognized by the relatively large plants, often with purple leaves, the elongate inflorescence to 65 cm tall, the sepals and petals greenish brown and the lip and apex of the column bright, mat, purple, it is the common species in northern mesoamerica, from Nicaragua north. It is similar to *Epidendrum anceps* Jacq. which has green plants and flowers and found in Costa Rica and Panama, as well as the Antillies. *Epidendrum musciferum* Lindl. widespread in South America and also found in Panama has smaller plants and especially flowers which are generally ochre-yellow with the column green. The flowers in this subgroup are so similar as to be difficult to describe their differences.



CONSERVATION STATUS: DD. Data deficient. The species is widespread and common in northern mesoamerica.

ETYMOLOGY: En honor a Henri Guillaume Galeotti (1814-1858), Belgian botanist, who collected numerous orchids in southern Mexico in the mid-nineteenth century.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: R. Peláez** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM GUARIDENSE Hágsater & E.Santiago **Plate 1336**

EPIDENDRUM GUARIDENSE Hágsater *et* E.Santiago, *sp. nov.*

Type: COLOMBIA: Valle del Cauca: Cordillera Occidental, vertiente occidental: monte La Guarida, filo de la cordillera sobre La Carbonera (entre Las Brisas y Albán), 1950-2000 m, 16 October 1946, ***J. Cuatrecasas 22152***.
Holotype: F! (Illustration voucher). Isotypes: US! VALLE!

Epidendro spathato Schltr. simile sed foliis oblongo-lanceolatis, inflorescentia racemosa pauciflora, floribus extus viridibus intus violaceis, labello albo, disco lilacino, labelli lobulis lateralibus transverse rectangularibus.

Hierba epífita, simpodial, cespitosa, erecta, 60-66 cm de alto. **Raíces** basales, teretes, delgadas, blancas, ca. 1-2 mm de grosor. **Tallos** sencillos, tipo caña, teretes, delgados, rectos, 46-48 x 0.2-0.35 cm; cubiertos en la base por vainas tubulares no foliares, escariosas y fibrosas con el tiempo, 3.5-4 cm de largo. **Hojas** 11-12, alternas, articuladas, erecto extendidas, desiguales en tamaño (las de la base más pequeñas); vainas tubulares, finamente estriadas, 1.3-4.0 x 0.2-0.35 cm; lámina angostamente oblongo lanceolada, acuminada, subcoriácea, margen entero, 5-13 x 1.1-1.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, erecta, pauciflora, laxa, 14-18 cm de largo; pedúnculo lateralmente aplanado, delgado, recto, 5-6 cm de largo; cubierto por 2 brácteas tubulares, acuminadas, 2-3.3 cm de largo. **Brácteas florales** más cortas que el ovario, angostamente triangulares, acuminadas, abrazadoras, 6-15 mm de largo. **Ovario** terete, delgado, ligeramente ensanchado en la mitad apical, diminutamente papiloso, 17-20 mm de largo. **Flores** 23-27, sucesivas, resupinadas, sépalos verde claro en la superficie dorsal, pálido violáceos ventralmente, labelo blanco con el disco lila; sin datos de fragancia. **Sépalos** entreabiertos, libres, angostamente elípticos, obtusos, 7-nervados, diminutamente papilosos en la superficie dorsal (en la zona apical) margen entero, extendido, 6-7 x 2-2.2 mm; los **laterales** diminutamente apiculados, ligeramente oblicuos. **Pétalos** entreabiertos, libres, filiformes, ápice redondeado, 1-nervados, 6 x 0.4 mm. **Labelo** unido a la columna, 3-lobado, ligeramente cordado en la base, 2.6 x 5 mm; bicalloso, los callos prominentes, subcorniformes, alargados hasta la base del lóbulo medio; disco con 3 quillas carnosas que se desvanecen hasta el seno apical de la lamina; lóbulos laterales transversalmente rectangulares, redondeados, margen ligeramente crenado, extendido, 2 x 1.7 mm; lóbulo medio formando un istmo en la base, el ápice bilobado con los lóbulos fuertemente divaricados, margen entero, 1.2 x 4.3 mm, cada lóbulo linear, ápice redondeado, 2.3 x 4.6 mm. **Columna** delgada, recta, con un par de alas prominentes en el ápice, 5 mm de largo. **Clinandrio** reducido, margen entero. **Antera** obovoidea, 4-locular. **Polinios** 4, tipo "ala de pájaro", fuertemente comprimidos lateralmente, el par interior más delgado; caudículas no vistas. **Rostelo** apical, hendido. **Lóbulos laterales del estigma**, pequeños, ocupando 1/3 del largo de la cavidad estigmática. **Nectario** penetrando la mitad del ovario, no inflado, no ornamentado. **Cápsula** no vista.

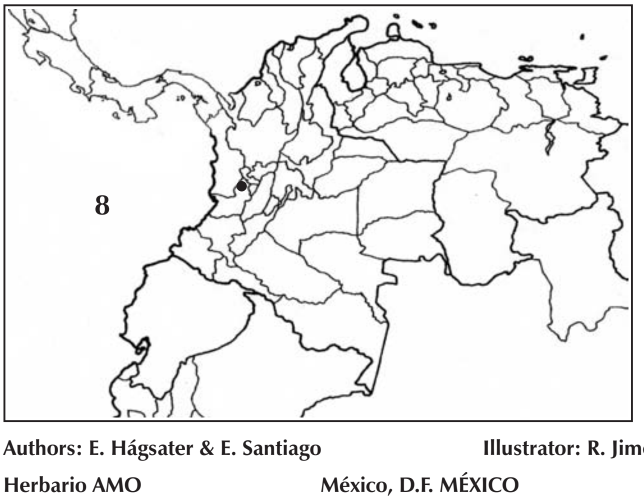
Epiphytic, sympodial, caespitose, erect **herb. Roots** basal, terete, thin, white. **Stems** simple, cane-like, terete, thin straight; the base covered by non-foliar, scarious sheaths, becoming fibrous with time. **Leaves** 11-12, alternate, articulate, erect-spreading, unequal in size (the lower ones smaller); sheaths tubular, minutely striated; blade, narrowly oblong-lanceolate, acuminate, sub-coriaceous, margin entire. **Inflorescence** apical, racemose, erect, lax, few-flowered; peduncle laterally compressed, thin, straight, covered by 2 tubular, acuminate bracts. **Floral bracts** much shorter than the ovary, narrowly triangular, acuminate, amplexicaul. **Ovary** terete, thin, long, slightly widened along the apical half, minutely papillose. **Flowers** 23-27, successive, resupinate, sepals dorsally light green, ventrally pale violaceous, lip white, the disc lilac. **Sepals** partly spreading, free, narrowly elliptic, obtuse, 7-veined, the dorsal surface minutely papillose towards the apex, margin entire, spreading; the lateral sepals minutely apiculate, slightly oblique. **Petals** partly spreading, free, filiform, apex rounded, 1-veined. **Lip** united to the column, 3-lobed, twice as wide as it is long, base slightly cordate; bicallose, the calli prominent, somewhat horn-like, elongate, reaching the base of the mid-lobe; disc with 3 fleshy keels that run to the apical sinus; lateral lobes transversely rectangular, rounded, margin slightly crenate, spreading; mid-lobe forming a wide isthmus at the base, the apex bilobed, with the lobes strongly divaricate, margin entire, each lobe linear, apex rounded. **Column** thin, straight, with a pair of prominent wings at the apex. **Clinandrium-hood** reduced, margin entire. **Anther** obovoid, 4-celled. **Pollinia** 4, "bird-wing" type, strongly laterally compressed, the inner pair narrower. **Rostellum** apical, slit. **Nectary** penetrating half the ovary, not inflated, unornamented.

OTHER SPECIMENS: None seen.

OTHER RECORDS: COLOMBIA: Without locality data, digital image published in Gallery of Colombian Orchids as *Epidendrum cirrhochilum 2*, CD, Bogotá, 2007.

DISTRIBUTION AND ECOLOGY: Known only from the eastern slope of the Cordillera Occidental in the Valle del Cauca, at 1950-2000 m altitude. Flowering in October.

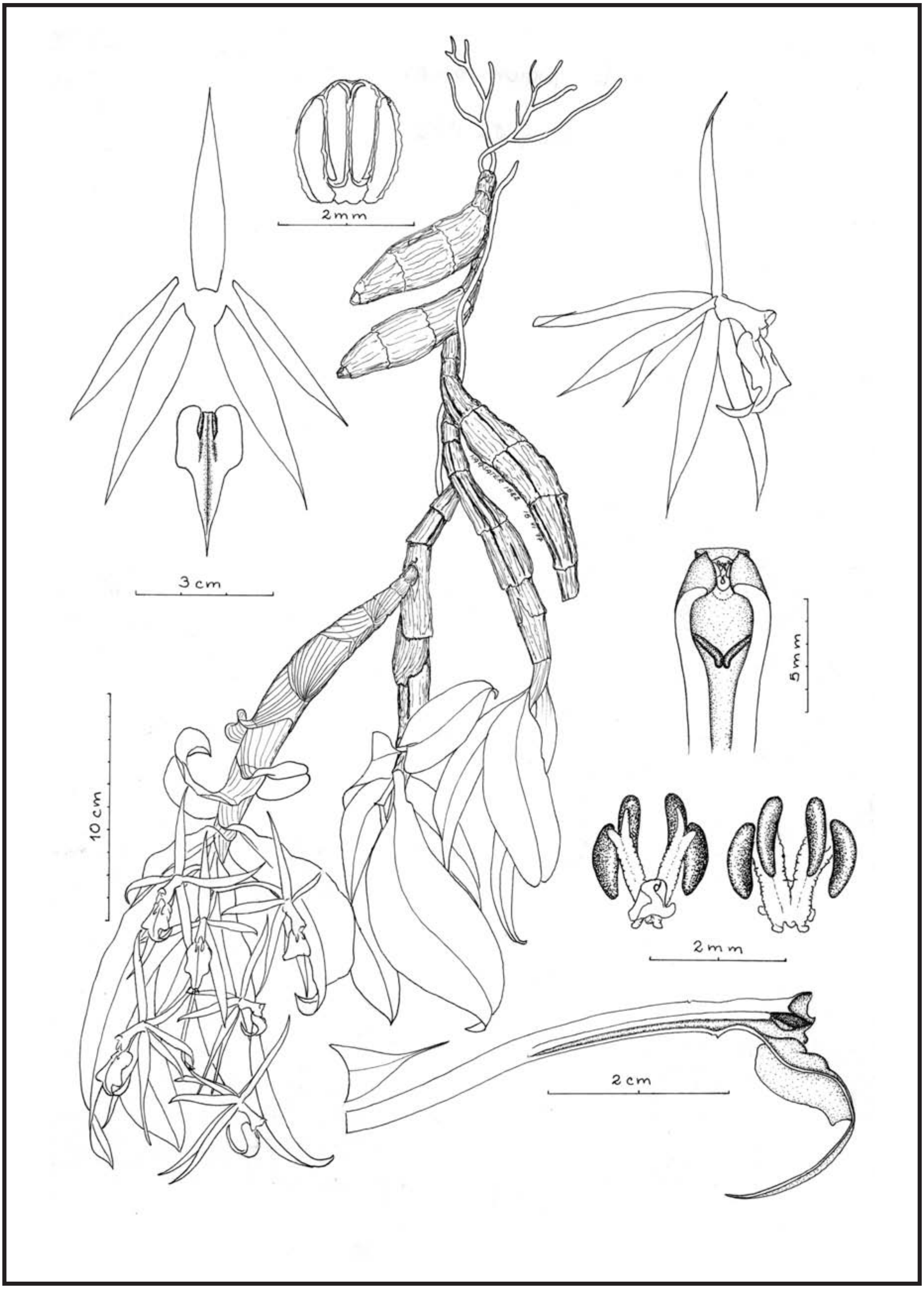
RECOGNITION: *Epidendrum guaridense* belongs to the Pseudepidendrum Group which is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, usually apical inflorescence, the filiform petals and the lip usually 3-lobed (with 3 parallel fleshy keels), the apical lobe often bifurcate, the "bird-wing" type pollinia, and Paniculatum Subgroup, which has green and white flowers, often parked with purple on the disc of the lip and apex of the column. The species is recognized by the narrowly oblong-lanceolate leaves, the racemose, erect inflorescence, small flowers (sepals 6-7 mm long) green outside, inside pale violaceous, the lip white with the disc lilac, and prominent horn-like calli. *Epidendrum spathatum* Schltr. has very similar horn-like calli, but the flowers are orange with the disc yellowish, the inflorescence paniculate and many-flowered, and the flowers are larger (sepals 10-12 mm long). *Epidendrum fastigiatum* Lindl. has a many-flowered, paniculate inflorescence, the flowers larger, the lip much wider with a pair of prominent calli, but these are not horn-like. *Epidendrum aguirrei* Hágsater has racemose inflorescences, the flowers very similar in size and color, but the lip has a single, wide callus, and the disc is 5-keeled.



CONSERVATION STATUS: DD. Data deficient. Known only from the type.

ETYMOLOGY: In reference to the Monte La Guarida, where the type was collected.

Authors: E. Hágsater & E. Santiago **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM HAGSATERI Christenson **Plate 1337**

EPIDENDRUM HAGSATERI Christenson, Brittonia 47 (1): 32. 1995.

Type: MEXICO: Oaxaca: Sierra de San Felipe, 7500 ft, 14 June 1894, ***Cyrus G. Pringle 4728.*** Holotype: NY! Isotypes: AMES! BR! CM 261973! E! F 39510! G x2! LE! M! MEXU 8830! MINN 92605! P x2! PH. PR! S! UC 116896! US 254674! W-R 2448! Z! *Epidendrum pugioniforme* of authors; not *Epidendrum pugioniforme* Regel, Act. Hort. Petrop. 11: 305.1890. (= *E. parkinsonianum* Hook.)

Hierba epífita, raramente litófita, simpodial, subcespitosa, colgante, 15-30 cm de alto. **Raíces** basales, carnosas, delgadas a gruesas, 0.6-1.5 mm de grosor. **Tallos** sencillos, engrosados formando un seudobulbo fusiforme, heteroblástico, recto, 4-10 x 0.3-1.1 cm; cubierto cuando joven por 3-6 vainas papiráceas. **Hojas** 3-5 agregadas en el ápice del seudobulbo, subcoriáceas, articuladas; lámina elíptica a oblanceolada, ápice agudo, 5-14 x 1.5-3.0 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, producida del tallo casi maduro, racemosa, cilíndrica, 8-10 cm de largo; pedúnculo terete, corto, 1.0-1.5 cm de largo, cubierto por 1-2 brácteas, conduplicadas, oblongo triangulares, acuminadas a agudas, 0.5-0.6 cm de largo; raquis terete, recto a sinuoso. **Brácteas florales** mucho más cortas que el ovario, triangulares, acuminadas, 0.5-0.9 cm de largo. **Ovario** terete, no inflado, no ornamentado, 30-50 x 1.0-1.8 mm. **Flores** 3-8, simultáneas, resupinadas, sépalos y pétalos verde a pardo cobrizo, labelo verde a verde amarillento y raramente con el disco teñido de rojo, callo rojo, columna verde en ocasiones tornándose crema hacia el ápice; fragancia nocturna, a jabón. **Sépalos** extendidos, libres, angostamente elíptico lanceolados, acuminados, 7-nervados, con dos venas secundarias pareciendo ser 9-nervados, margen entero, algo revoluto, 22-46 x 3.0-8.0 mm; los **laterales** en ocasiones colgantes, oblicuos. **Pétalos** extendidos raramente reflexos, libres, linear elípticos, ligeramente oblicuos, acuminados, 3-nervados, con dos venas secundarias, dando la apariencia de ser 5-nervados, margen entero, extendido, 20-42 x 2.0-3.0 mm. **Labelo** unido a la columna, trilobado, base truncada, reflexo en posición natural, 15-35 x 9-15 mm; bicalloso, los callos laminares, prominentes, disco con una quilla baja, la cual se prolonga hasta el ápice del lóbulo medio; lóbulos laterales suborbiculares a subrectangulares, enteros, 6.0-14.0 x 3.0-6.0 mm; lóbulo medio triangular, acuminado, 10-21 x 3-8 mm. **Columna** recta, delgada, 12-15 mm de largo. **Clinandrio** corto, entero. **Antera** subesférica, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, más largas que los polinios; viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando un medio de la cavidad estigmática. **Nectario** profundo, penetrando 1/2 del ovario, no ornamentado. **Cápsula** ovoide, pedúnculo corto, 0.5 cm de largo, cuerpo 3.0 x 1.3 cm, cuello 1.8 cm de largo.

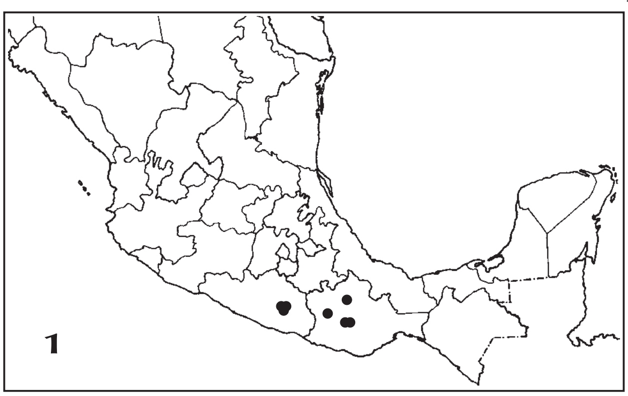
Epiphytic, rarely lithophytic, sympodial, sub-caespitose, pendent **herb. Roots** basal, fleshy, thin to thick. **Stems** simple, thickened, forming a fusiform, heteroblastic pseudobulb, straight; covered when young by 3-6 papiraceous sheaths. **Leaves** 3-5 aggregate at the apex of the pseudobulb, sub-coriaceous, articulate; blade elliptic to oblanceolate, apex acute. **Inflorescence** apical, produced from the nearly mature pseudobulb, racemosa, cylindrical; peduncle terete, short, covered by 1-2, conduplicate, oblong-triangular, acuminate to acute bracts; rachis terete, straight to sinuous. **Floral bracts** much shorter than the ovary, triangular, acuminate. **Ovary** terete, not inflated, unornamented, long. **Flowers** 3-8, simultaneous, resupinate, sepals and petals green to copper-brown, lip green to yellowish green, rarely with the disc tinged red, callus red, column green, occasionally turning cream-colored towards the apex; fragrance nocturnal, of soap. **Sepals** spreading, free, narrowly elliptic-lanceolate, acuminate, 7-veined, with a pair of secondary veins so as to appear 9-veined, margin entire, somewhat revolute; the lateral sepals occasionally pendent, oblique. **Petals** spreading, rarely reflexed, free, linear-elliptic, slightly oblique, acuminate, 3-veined, with a pair of secondary veins so as to appear 5-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base truncate, reflexed in natural position; bicallose, the calli laminar, prominent, disc with a low keel which is prolonged to the apex of the mid-lobe; lateral lobes sub-orbicular to sub-rectangular, entire; mid-lobe triangular, acuminate. **Column** straight, thin, long. **Clinandrium-hood** short, entire. **Anther** sub-spherical, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose, longer than the pollinia; viscidium semi-liquid, transparent. **Rostellum** apical, slit. **Nectary** deep, penetrating ½ of the ovary, unornamented. **Capsule** ovoid, peduncle short, apical neck long.

OTHER SPECIMENS: MÉXICO: Guerrero: Omiltemi, ca. 2000 m, *Hágsater 1582*, AMO x2! (Illustration voucher). Chichihualco; Filo de Caballo, 2400 m, 2 IV 1972, *Hágsater 2451*, MEXU! xerox, AMO! W of Chilpancingo, ca. 7000 ft, 1 V 1955, *Johnson 555-8*, SEL! Parque Ecologico Estatal Omiltemi, Plan de Potrerillos, ca. 2400 m, 25 VI 1985, *Salazar 775*, AMO x2! Plan de Potrerillos, Parque Estatal Omiltemi, 2520 m, 13 V 1985, *Torres 1832*, FCME! Ibid. *Torres 1833*, AMO! **Oaxaca:** Chalcantogo de Hidalgo, Aldama-Yosondúa, 2265 m, 12 IX 1995, *Ceja 149*, AMO x2! Ibid. *Hágsater 12516*, AMO! Varado, 1 I 1956, *Kennedy 57.412-1*, MO! Ibid. VI 1963, *Kennedy s.n.*, UC! km 35, Rio de la Y, 22 V 1974, *McCullough 1653*, AMO! Mt. San Felipe, 2300 m, 1 VIII 1984, *Nagel 3748*, MO! Cerro San Felipe, 29 III 1970, *Pollard 2D-190-101*, MEXU! Near Oaxaca-town, 1 XII 1927, *Richards 2745*, AMES! Sta. Ma. Lachixio, 2000 m, 9 V 1993, *Salas 539*, AMO! Mt. San Felipe, 1 I 1927 *Sawyer 2745*, F!

OTHER RECORDS: MEXICO: Guerrero: Omiltemi, ca. 2000 m, *Hágsater 1582*, flowers in spirit AMO! Illustration, xerox copy ENCB! MEXU! **Oaxaca:** Tlaxiaco, camino a Ocotepec, 2200, 1 V 1985, *Bussey 259 sub Hágsater 7909*, note, AMO! km 35, Río de la Y, 8400 ft, 13 I 1974, *Pollard IF-190-101*, photos, AMO! Cerro San Felipe, 4 IV 1965, *Lange sub Pollard s.n.*, flower card, AMO! Río de la Y, 22 V 1974, *McCullough 1653*, slide, AMO!

DISTRIBUTION AND ECOLOGY: Endemic to Mexico, to the Sierra Madre del Sur in the states of Guerrero and Oaxaca. Epiphytic, rarely lithophytic in pine-oak forests at 1900-2520 m. Flowering from January to September.

RECOGNITION: *Epidendrum hagsateri* belongs to the Falcatum Group which is characterized by the sympodial, caespitose, pendent plants, coriaceous to succulent leaves, apical, racemose inflorescence with a short peduncle, covered by 1-2 bracts (non spathaceous), and the large, star-shaped flowers. The species is recognized by the inflorescence produced from the nearly mature pseudobulb, with 3-8 flowers, sepals and petals green to copper-brown, lip green to yellowish green, the disc occasionally tinged with red, callus red, column green, turning cream-colored towards the apex; lateral lobes of the lip sub-orbicular to sub-rectangular, mid-lobe triangular. It is similar to *Epidendrum lacertinum* Lindl. which also has green flowers and the lip occasionally red at the base, the mid-lobe purple, calli white, lateral lobes triangular, and the mid-lobe linear. *Epidendrum falcatum* Lindl. is lithophytic, with brittle plants, the stems forming fusiform, uni-foliate, pseudobulbs, the leaf coriaceous-succulent, flowers white, sepals pink without, calli yellow, mid-lobe of the lip clearly separated from the lateral lobes by deep sinuses. *Epidendrum parkinsonianum* Hook. has long, pendent plants, to 2 m tall, epiphytic, the stems terete, without forming pseudobulbs, flowers larger, sepals and petals generally 40-85 mm long, green to yellowish green, column and lip white, calli yellow, mid-lobe of the lip separated from the lateral lobes by deep sinuses, and generally much longer than the former, by 2-3 cm in length, nectary pilose.



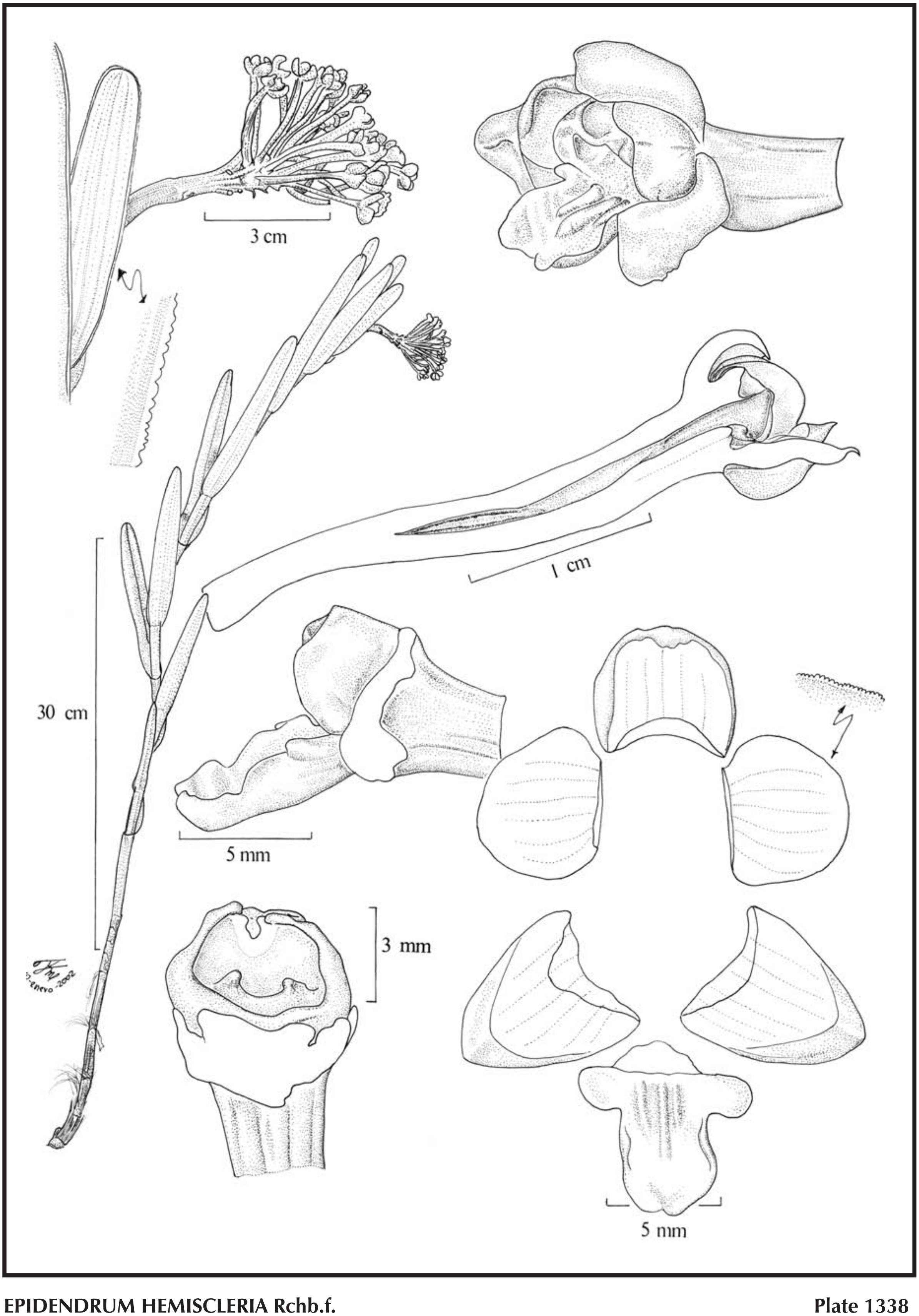
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CONSERVATION STATUS: DD. Data deficient. Though the species used to be locally common, it appears to have disappeared from some localities, from which there are no recent collections.

ETYMOLOGY: In honor of Eric Hágsater, founder and director of the AMO Herbarium, who has contributed enormously to the knowledge of Mexican orchids, and especially to the understanding of the genus *Epidendrum* L. throughout the Neotropics.

REFERENCES: Hágsater, E., 1990, *Epidendrum pugioniforme in* Hágsater, E., & G. Salazar, (eds.), Orchids of Mexico, **Icon. Orchid. (Mexico)** 1: pl. 39. 1990.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM HEMISCLERIA Rchb.f. **Plate 1338**

EPIDENDRUM HEMISCLERIA Rchb.f., Ann. Bot. Syst. 6: 383. 1862.

Basionym: *Hesmiscleria nutans* Lindl. Folia Orch. *Hemiscleria,* 1853. Type: PERU: Chachapoyas, 1841, ***Andrew Mathews s.n.*** Holotype: K-L, photo AMES!

Synonyms: *Diothonea nutans* (Lindl.) C. Schweinf., Bot. Mus. Leafl. 11(6): 179. 1944. *Epidendrum rhopalorhachis* Kraenzl. Repert. Spec. Nov. Regni Veg. 12(1): 180. 1905. Type: PERU: Cajamarca: Chugur, nordwestlich von Hualgayoc, 2700-2900 m, ***Weberbauer 4100.*** Holotype: B (destroyed). Lectotype (designated by E. Christenson, 2005): MOL! (photo NY) Isolectotype: PR!

Hierba epífita, simpodial, erecta, cespitosa, no ramificada, de 40-80 cm de alto. **Raíces** basales, carnosas, gruesas, blancas, 1-3 mm de grosor. **Tallos** sencillos, tipo caña, teretes, erectos, rectos, 35-70 x 0.3-0.8 cm; cubiertos en la base por vainas tubulares no foliares, escariosas y fibrosas con el tiempo, 4.5-5 cm de largo. **Hojas** 10-15, distribuidas a lo largo de los dos tercios apicales del tallo, alternas, articuladas, suberectas, coriáceas, rígidas, desiguales en tamaño (tanto la basal como la apical más cortas), de color verde amoratado; vaina tubular, finamente estriada y rugosa, teñida de púrpura rojizo intenso, 1.2-6 x 0.4-1.5 cm; lámina oblongo lanceolada, ápice redondeado, bilobado, margen crenulado, 2.8-15 [19] x 0.8-1.7 [2.6] cm. **Brácteas espatáceas** 2, pequeñas, semitubulares, conduplicadas, agudas, 1.0-1.7 cm de largo. **Inflorescencia** apical, racemosa, subglobosa, densa, producida en un fascículo alrededor del raquis, arqueada a raramente erecta, 8-11 cm de largo; pedúnculo terete, grueso, fuertemente arqueado u horizontal con respecto al tallo, de color púrpura oscuro, 4-6.5 cm de largo; raquis engrosado, 2.5-3.5 cm de largo. **Brácteas florales** muy pequeñas, anchamente triangulares, agudas, abrazadoras, 2 mm de largo. **Flores** 35-55, resupinadas, simultáneas, muy carnosas, de consistencia rígida, dura, de color naranja con el ovario rosado rojizo, lustroso. **Ovario** terete, grueso, no inflado, estriado, de color rojo brillante, 20-27 mm de largo. **Sépalos** entreabiertos, libres, 6-nervados, cóncavos, dorsalmente rugoso papilosos hacia el ápice, margen entero; el **dorsal** orbicular, ápice redondeado, 4-5 x 5.5-6 mm; los **laterales** anchamente triangulares, ápice subobtuso, 5-6.7 x 6-6.5 mm. **Pétalos** entreabiertos, libres, ovado orbiculares, redondeados a subobtusos en el ápice, margen diminutamente eroso, extendido, 5.4 x 6.5 mm. **Labelo** unido muy en la base de la columna, trilobado, truncado en la base, margen entero, algo involuto en los costados laterales, 6.3 x 7.6 mm; ecalloso, con tres quillas romas en el disco, las laterales más cortas; lóbulos laterales extendidos, pequeños, suborbiculares, redondeados, 2 x 2 mm; lóbulo medio más grande, cuadrado oblongo, ápice truncado, levemente emarginado, 4.5 x 4.3 mm. **Columna** muy corta, recta, gruesa, 3-3.5 mm de largo. **Clinandrio** corto, margen entero. **Antera** no vista. **Polinios** 4, obovoides, semejantes en tamaño; caudículas suaves y granulosas, tan largas como los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** angosto, penetrando ligeramente el ovario. **Cápsula** orbicular; pedicelo terete, 12-13 mm de largo; cuerpo, 20 x 20 mm; cuello apical obsoleto, con el perianto persistente.

Epiphytic, sympodial, caespitose, erect **herb**. **Roots** basal, fleshy, thick, white, thick. **Stems** simple, cane-like, terete, erect, straight; the base covered by non-foliar tubular, scarious sheaths, becoming fibrous with time. **Leaves** 10-15, distributed throughout the apical 2/3 of the stem, alternate, articulate, sub-erect, coriaceous, rigid, unequal in size (the apical and basal ones smaller), purplish green; sheath tubular, minutely striated and rugose, tinged with intense reddish purple; blade oblong-lanceolate, apex rounded, bilobed, margin crenulate. **Spathaceous bracts** 2, small, semi-tubular, conduplicate, acute, short. **Inflorescence** apical, racemose, sub-globose, dense, produced in a fascicle around the rachis, arched to rarely erect; peduncle terete, thick, strongly arched or horizontal with respect to the stem, dark purple; rachis thickened. **Floral bracts** very small, widely triangular, acute, amplexicaul. **Flowers** 35-55, resupinate, simultaneous, very fleshy, the segments rigid, hard, orange, the ovary reddish pink, lustrous. **Ovary** terete, thick, not inflated, striated, bright red. **Sepals** partly spreading, free, 6-veined, concave, dorsally rugose-papillose towards the apex, margin entire; the dorsal sepal orbicular, apex rounded; the lateral sepals widely triangular, apex sub-obtuse. **Petals** partly spreading, free, ovate-orbicular, apex rounded to sub-obtuse, margin minutely eroso, spreading. **Lip** united to the very base of the column, 3-lobed, base truncate, margin entire, somewhat involute along the sides; ecallose, with 3 low, parallel, narrow keels on the disc, the lateral ones shorter; lateral lobes spreading, small, sub-orbicular, rounded; mid-lobe larger, quadrate-oblong, apex truncate, slightly emarginate. **Column** very short, straight, thick. **Clinandrium-hood** short, margin entire. **Pollinia** 4, obovoid, similar in size; caudicles soft and granulose, as long as the pollinia. **Rostellum** apical, slit. **Nectary** narrow, somewhat penetrating the ovary. **Capsule** orbicular; pedicel terete, apical neck obsolete, perianth persistent.

OTHER SPECIMENS: PERU: Amazonas: Leimebamba trail to Pushkán, 9 VI 1977, *Boeke 1992*, SEL! slope of Cerro Calla Calla, 2 VI 1966, *Edwin 3641*, AMO! F! USM! Cerros above Calla Calla, 28 III 1964, *Hutchinson 4685,* AMES! USM! Ibid. 4 VI 1964, *Hutchinson 5520*, AMES! F! MO! US! USM! Leimebamba, VI 1963, *López 4425*, AMES! Ibid. 14 IX 1942, *Metcalf 30794,* AMES! MO! US! Calla Calla, 3100 m, 24 III 1988, *Molau 3403*, GB! Leimebamba, 3200-3300 m, 15 VIII 1998, *Quipuscoa 1189*, AMO! F! San Pedro Waslipa, 2900 m, *Reichlen 240*, P! Upper slopes of Puma-Urcu, 2700-3000 m, 1 VI 1962, *Wurdack 685*, AMES! F! NY! US! USM! **Cajamarca:** entre Llama y Huambos, 3090 m, 14 VIII 1994, *Leiva 1516*, AMO! (Illustration voucher). F! **Lambayeque:** Incahuasi, 2850 m, 11 IX 1985, *Sagástegui 12768,* F! SEL!



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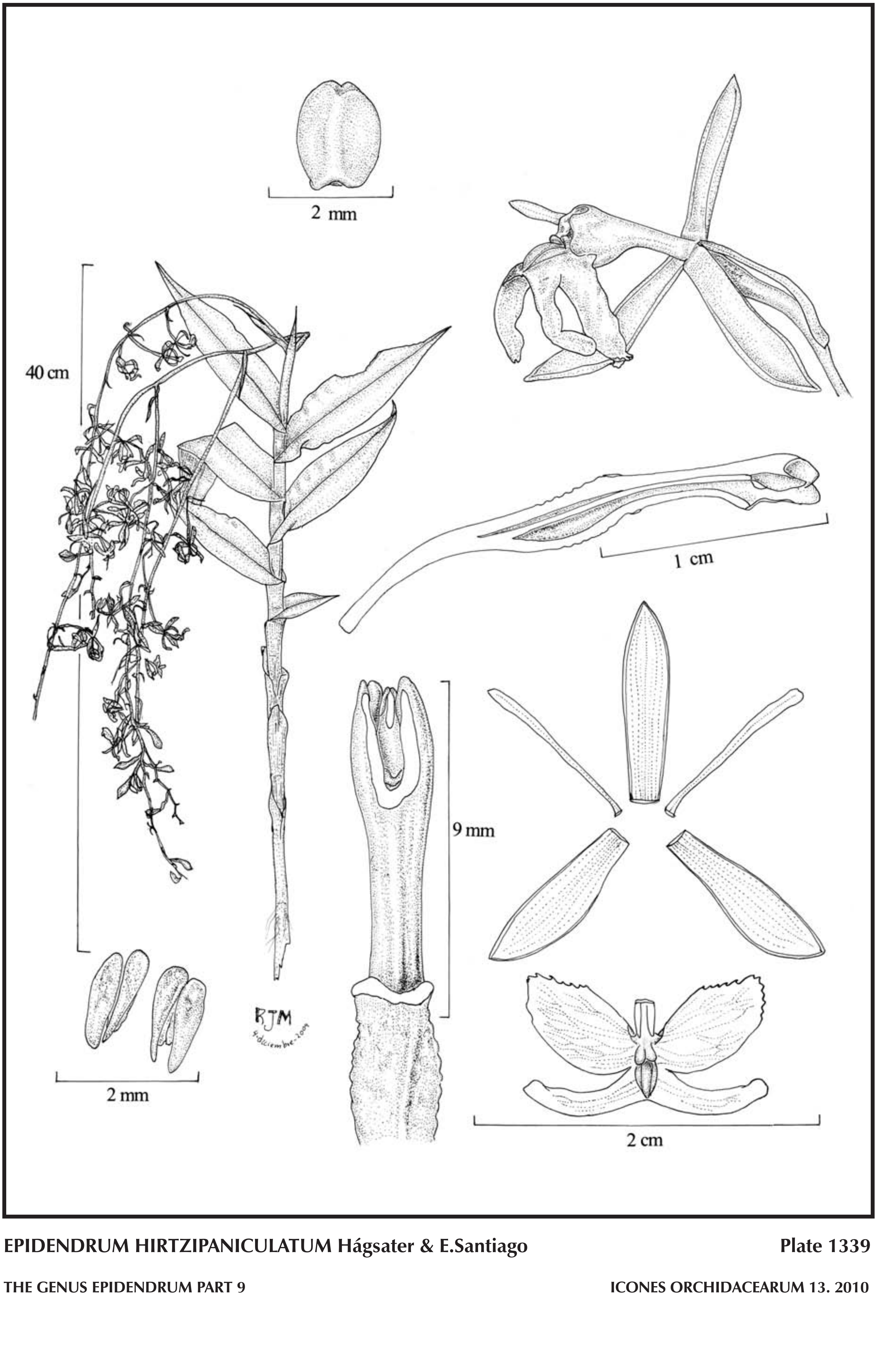
DISTRIBUTION AND ECOLOGY: Known only from Peru, on the Cordillera Oriental east of the Río Marañón, between Leimebamba and Chachapoyas, and across the Marañón, on the Cordillera Occidental in the province of Cajamarca. Epiphytic at 2700-3300 m altitude. Flowering in March, June to August and October.

RECOGNITION: *Epidendrum hemiscleria* belongs to the Hemiscleria Group which is characterized by the caespitose habit, simple stems, with numerous (oblong-lanceolate) leaves sub-parallel to the stem, an apical Inflorescence with a strong peduncle and very thick rachis with, racemose, sub-globose, dense, produced in a fascicle around the rachis, flowers fleshy, hard, bright orange-yellow. The species is recognized by the erect stem with the peduncle of the inflorescence dark purple, a pair of tubular, acute spathaceous bracts at the base, the ovary bright red, and the lip with sub-orbicular lateral lobes; the disc of the lip with 3 narrow, parallel, low keels, and the apex of the mid-lobe shallowly emarginate. *Epidendrum occidentalis* (Christenson) Hágsater & E.Santiago (*Epidendrum hemiscleria* Rchb.f. subsp. *occidentalis* Christenson) has arching-pendent stems, the peduncle of the inflorescence reddish, without any spathaceous bracts at the base, the ovary greenish yellow, and the lateral lobes of the lip sub-quadrate; the disc of the lip has a pair of parallel, low, wide, short keels and a circular hump in front, the apex of the mid-lobe is truncate, not emarginate. Christenson described the difference in size of the plants, as well as the erect or arching inflorescence, but these features seem variable in both species.

CONSERVATION STATUS: DD. Data deficient. The species, in spite of the spectacular color of the inflorescence is scarce in herbaria.

ETYMOLOGY: From the Greek ημι- half, and σκληροκ-hard; probably in reference to the hard, fleshy quality of the floral segments, as described by Lindley.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM HIRTZIPANICULATUM Hágsater & E.Santiago **Plate 1339**

EPIDENDRUM HIRTZIPANICULATUM Hágsater *et* E.Santiago, *sp. nov.*

Type: ECUADOR: Pichincha: Río Cinto, western side of Mt. Pichincha, 1800 m, December 1988, ***Alex Hirtz 3954.*** Holotype: MO! (Illustration voucher). Isotype: QCNE!

Epidendro angustilobopaniculato Hágsater & Dodson simile sed inflorescentia caule fere aequilonga, racemis longioribus, ovario inflato, sepalis dorsaliter ornatis, labelli lobulis lateralibus oblique ellipticis et margine dentato differt.

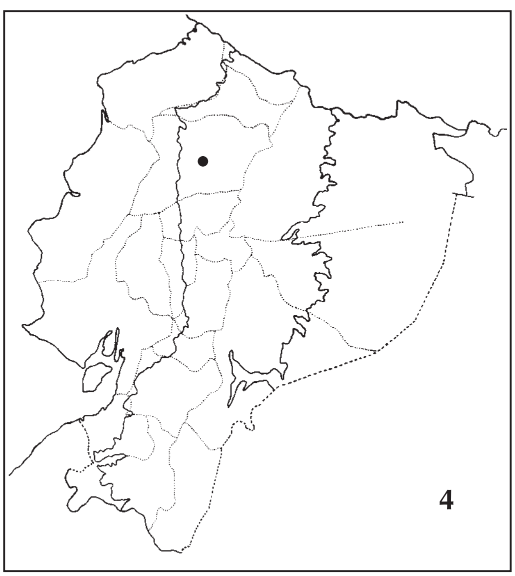
Hierba epífita, simpodial, cespitosa, de 67 cm de alto. **Raíces** basales. **Tallos** sencillos, tipo caña, teretes en la base a lateralmente aplanados hacia el ápice, erectos, rectos, 27 x 0.4-1 cm; cubiertos en la base por vainas tubulares no foliares, escariosas y fibrosas con el tiempo, 2-4 cm de largo. **Hojas** 6, alternas, articuladas, distribuidas a lo largo de la mitad apical del tallo, desiguales en tamaño (la basal más pequeña); vaina tubular, finamente estriada, 1.5-2.5 cm de largo; lámina elíptica, acuminada, margen entero, 4.5-13 x 1.2-3.2 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, paniculada, florece una sola vez, pluriflora, laxa, 43 cm de largo; pedúnculo algo lateralmente aplanado, recto, 4.5 cm de largo; oculto en su totalidad por una bráctea tubular, acuminada, 6.5 cm de largo; raquis provisto de 3 racimos (todos casi de la misma longitud), de 25-33 cm de largo; cada uno de ellos con una bráctea basal, prominente, triangular, acuminada, abrazadora, 2-3.7 cm de largo. **Brácteas florales** más cortas que el ovario, angostamente triangulares, acuminadas, abrazadoras, 5-12 mm de largo. **Flores** ca. 90, simultáneas (aunque unas cuantas apicales presentes en botón floral), resupinadas, de color verde con el labelo y la columna blancos; sin datos de fragancia. **Ovario** terete, ligeramente inflado justo detrás del perianto, papiloso en la parte inflada, 22 mm de largo. **Sépalos** extendidos, libres, angostamente oblanceolados, obtusos, 7-nervados, la superficie dorsal diminuta y escasamente papilosa, margen entero, extendido, 11 x 2.7-3 mm; los **laterales** ligeramente oblicuos. **Pétalos** entreabiertos, libres, filiformes, obtusos, 1-nervados, margen entero, extendido, 10.5 x 0.8 mm. **Labelo** unido a la columna, 3-lobado, cordado en la base, tan ancho entre los lóbulos laterales como entre el lóbulo medio, 8 x 14 mm; bicalloso, los callos pequeños, subglobosos; disco provisto de 3 quillas agudas, alargadas hasta el seno apical; lóbulos laterales oblicuamente elípticos, falcado-retrorsos, margen apical dentado, extendido, 6.3 x 5 mm; lóbulo medio bilobado, 2.7 x 14 mm; formando un par de lóbulos fuertemente divaricados, cada lóbulo linear-falcado, con el ápice redondeado, margen entero, extendido, 7 x 1.3 mm. **Columna** recta, delgada, con un par de dientes apicales, redondeados, 9 mm de largo. **Clinandrio** reducido, margen entero. **Antera** ovoidea, 4-locular. **Polinios** 4, tipo ala de pájaro, semejantes en tamaño; caudículas laminares, algo más cortas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** pequeños, de menos de la mitad del largo de la cavidad estigmática. **Nectario** penetrando 1/3 del ovario, ligeramente inflado, no ornamentado. **Cápsula** no vista.

Epiphytic, sympodial, caespitose, tall **herb**. **Roots** basal. **Stems** simple, cane-like, terete at the base, laterally compressed towards the apex, erect, straight; base covered by non-foliar, scarious tubular sheaths, becoming fibrous with time. **Leaves** 6, alternate, articulate, distributed along the apical half of the stem, unequal in size (the basal one smaller); sheaths tubular, minutely striated; blade elliptic, acuminate, amplexicaul. **Inflorescence** apical, paniculate, flowering only once, lax, many-flowered; peduncle somewhat flattened, straight, nearly totally hidden by an acuminate, tubular bract; rachis provided with 3 racemes, all similar in size, each subtended by a prominent, triangular, acuminate, amplexicaul bract. **Foral bracts** much shorter than the ovary, narrowly triangular, acuminate, amplexicaul. **Flowers** ca. 90, simultaneous (though some apical buds are still closed when most are open), resupinate, green, the lip and column white. **Ovary** terete, slightly inflated just behind the perianth, papillose along the inflated segment. **Sepals** spreading, free, narrowly oblanceolate, obtuse, 7-veined, the dorsal surface minutely and scarcely papillose, margin entire, spreading; the lateral sepals slightly oblique. **Petals** partly spreading, free, filiform, obtuse, 1-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base cordate, equally wide between the lateral and mid-lobes; bicallose, the calli small, sub-globose; disc provided with 3 acute, elongate keels, reaching the apical sinus; lateral lobes obliquely elliptic, falcate-retrorse, the apex rounded, apical margin dentate, spreading; mid-lobe bilobed, forming a pair of strongly divaricate lobes, each lobe linear-falcate, the apex rounded, margin entire, spreading. **Column** straight, thin, with a pair of apical, rounded teeth. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, 4-celled. **Pollinia** 4, "bird-wing type", similar in size; caudicles laminar, somewhat shorter than the pollinia. **Rostellum** apical, slit. **Nectary** penetrating 1/3 of the ovary, slightly inflated, unornamented.

OTHER SPECIMENS: None seen.

DISTRIBUTION AND ECOLOGY: Known only from the type, on Mount Pichincha, on the western Andes in central Ecuador, epiphytic, at 1800 m altitude. Flowering in December.

RECOGNITION: *Epidendrum hirtzipaniculatum* belongs to the Pseudepidendrum Group which is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, usually apical inflorescence, the filiform petals and the lip usually 3-lobed (with 3 parallel fleshy keels), the apical lobe often bifurcate, the "bird-wing" type pollinia, and Paniculatum Subgroup, which has green and white flowers, often marked with purple on the disc of the lip and apex of the column. The species is recognized by the paniculate inflorescence which is nearly as long as the stem, composed of long and lax-flowered racemes, the ovary slightly inflated behind the perianth, papillose, the lip with obliquely elliptic, falcate-retrorse and the apical margin dentate. *Epidendrum angustilobopaniculatum* has more delicate flowers, the racemes of the inflorescence shorter (ca. 10 cm long), the ovary is not inflated and the lip has anchor-shaped lateral lobes with an entire margin. *Epidendrum peraltum* Schltr. has larger plants, pyramid-like inflorescences with larger flowers (sepals 14-16 mm long), generally pink, the lip with lateral lobes falcate-retrorse, and the calli horn-like.

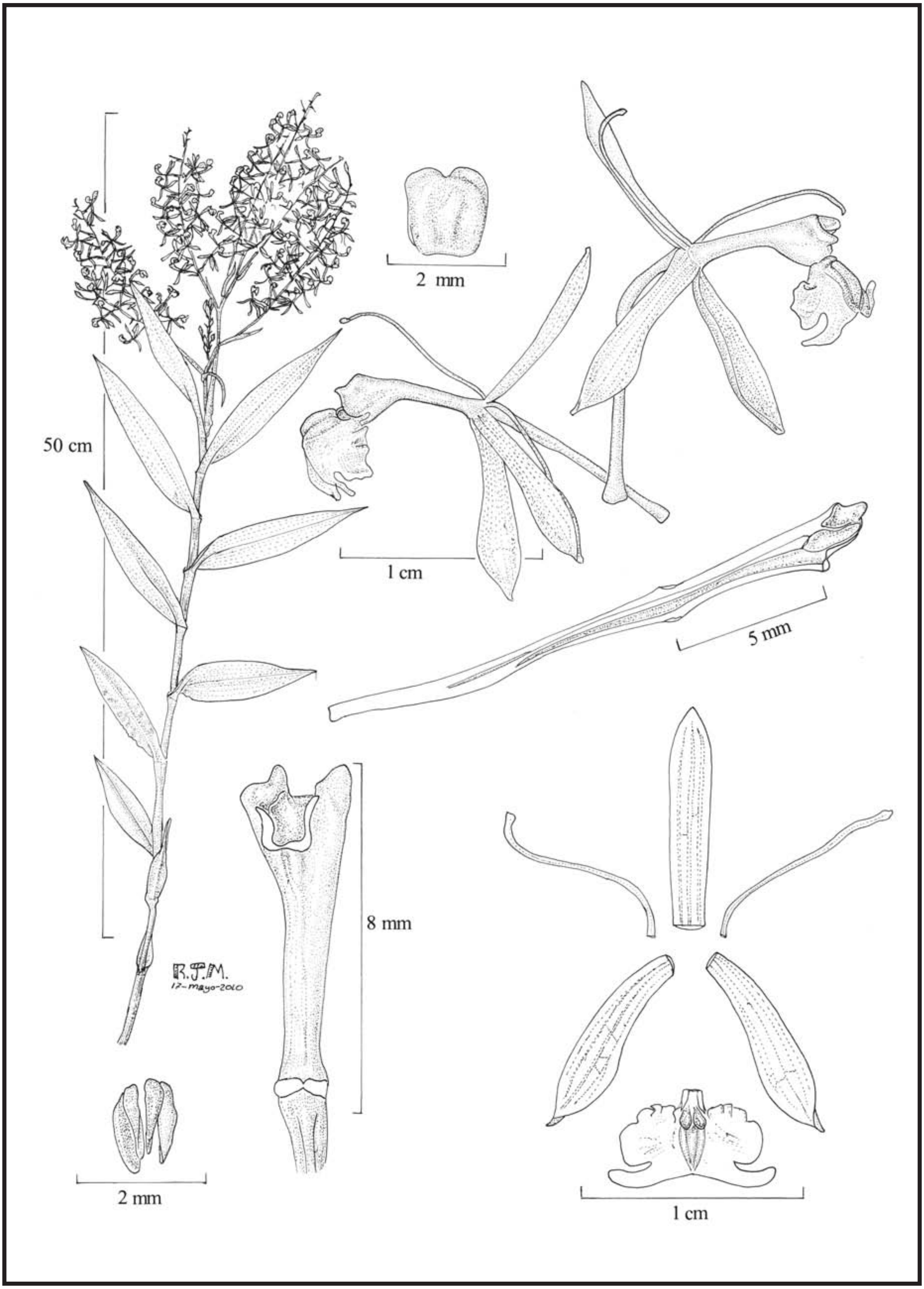


NOTE: This species, as well as *E. nanegalense* Hágsater & Dodson and *E. clarkii* Hágsater & E.Santiago are unique in the Pseudepidendrum Group in that they have an inflated, papillose ovary.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Alexander Hirtz, (b. 1951) Mining Engineer of Quito, Ecuador, and one of the best current orchid collectors. He has collaborated extensively with most botanists who have collected in the country, including the senior author.

Authors: E. Hágsater & E. Santiago **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM HUMIDICOLUM Schltr. **Plate 1340**

EPIDENDRUM HUMIDICOLUM Schltr., Repert. Spec. Nov. Regni Veg., Beih. 10: 44. 1922.

Basionym: *Epidendrum crassinervium* Schltr., Meded. Rijks-Herb. Leiden 29:72, 1916.
Type: BOLIVIA: Santa Cruz: bei Tres Cruces, 1450 m, February 1911, ***Theodore Herzog 1623.*** Holotype: B (destroyed) Isotypes: L! S! (Illustration voucher). Not *E. crassinervium* Kraenzlin, 1906.

Hierba terrestre, simpodial, cespitosa, erecta, de 60-70 cm de alto. **Raíces** basales, carnosas. **Tallos** sencillos, tipo caña, teretes, erectos, 35-45 x 0.5-0.6 cm. **Hojas** 10, distribuidas a lo largo del tallo, articuladas, dísticas, erecto extendidas, desiguales en tamaño (las basales más pequeñas); vaina tubular, finamente estriada, 2-4 x 0.5-0.6 cm; lámina oblongo elíptica, acuminada, margen entero, extendido, 3.3-12 x 0.9-2.1 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, paniculada, florece una sola vez, suberecta, pluriflora, subdensa, ca. 25 cm de largo; pedúnculo corto, lateralmente aplanado, 3-4 cm de largo; provisto de 1 bráctea conduplicada, acuminada, ca. 5-6 cm de largo; raquis con 6 racimos paucifloros, subparalelos al raquis, 10-14 cm de largo; cada uno de ellos con una bráctea basal angostamente triangular, largamente acuminada, abrazadora, 2-3 cm de largo. **Brácteas florales** más cortas que el ovario, angostamente triangulares, acuminadas, abrazadoras, ca. 2-7 mm de largo. **Ovario** terete, delgado, no inflado, glabro, 10-13 mm de largo. **Flores** ca. 160, simultáneas, resupinadas, sin datos de color ni fragancia. **Sépalos** reflexos, libres, oblongo oblanceolados, subagudos, 3-4-nervados, las nervaduras evidentes, margen entero, extendido, 10 x 2 mm; los **laterales** oblicuos, apiculados. **Pétalos** reflexos, libres, filiformes, algo sigmoides obtusos, 1-nervados, margen entero, extendido, 9 x 0.5 mm. **Labelo** unido a la columna, convexo, de forma general subcuadrado, ligeramente más ancho entre los lóbulos apicales que entre los laterales, trilobado, truncado en la base, 3.5 x 5.5 mm; bicalloso, los callos pequeños, subglobosos; disco provisto de 3 quillas intercallosas, alargadas hasta cerca del seno apical (la central más ancha); lóbulos laterales subcuadrados, margen irregular, 2.5 x 2.5 mm; lóbulo medio muy corto, formando un par de lóbulos oblongos, falcados, fuertemente divaricados, margen entero; cada lóbulo de 1.5 x 5.5 mm. **Columna** recta, delgada, ligeramente dilatada en el ápice, 8 mm de largo; ápice bidenticulado con un par de alas redondeadas. **Clinandrio** reducido, margen entero. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** no vistos. **Antera** ovoide, 4-locular. **Polinios** 4, tipo ala de pájaro, el par interior ligeramente más corto. **Nectario** penetrando la mitad del ovario, no inflado, no ornamentado. **Cápsula** no vista.

Terrestrial, sympodial, caespitose, erect **herb**. **Roots** basal, fleshy. **Stems** simple, cane-like, terete, erect. **Leaves** 10, distributed throughout the stem, articulate, distichous, erect-spreading, unequal in size, the basal ones smaller; sheath tubular, minutely striated; blade oblong-elliptic, acuminate, margin entire, spreading. **Spathaceous bract** lacking. **Inflorescence** apical, paniculate, flowering only once, sub-erect, densely many-flowered; peduncle short, laterally compressed, short, provided with a single conduplicate, acuminate bract; rachis with 6 few-flowered, sub-parallel racemes, each with a basal, narrowly triangular, long-acuminate, amplexicaul bract. **Floral bracts** much shorter than the ovary, narrowly triangular, acuminate, amplexicaul. **Ovary** terete, thin, not inflated, glabrous. **Flowers** ca. 160, simultaneous, resupinate. **Sepals** reflexed, free, oblong-oblanceolate, sub-acute, 3-4-veined, the veins evident, margin entire, spreading; lateral sepals oblique, apiculate. **Petals** reflexed, free, filiform, somewhat sigmoid, obtuse, 1-veined, margin entire, spreading. **Lip** united to the column, convex, sub-quadrate in general outline, slightly wider between the apical lobes than between the lateral lobes, 3-lobed, base truncate; bicallose, the calli small, sub-globose; disc provided with 3 parallel keels, elongate, reaching the apical sinus, the mid-keel wider; lateral lobes sub-quadrate, margin irregular; mid-lobe very short, forming a pair of strongly divaricate, falcate, oblong lobes, margin entire. **Column** straight, thin, slightly dilated towards the apex; apex bidentate, with a pair of rounded wings. **Clinandrium-hood** reduced, margin entire. **Rostellum** sub-apical, slit. **Anther** ovoid, 4-celled. **Pollinia** 4, "bird wing" type, the inner pair slightly shorter. **Nectary** penetrating half the ovary, not inflated, unornamented.

OTHER SPECIMENS: None seen.

OTHER RECORDS: PERU: Without locality, *Morón s.n.*, digital photo, AMO!

DISTRIBUTION AND ECOLOGY: From the eastern slope of the Cordillera Oriental of the Andes in central Bolivia and apparently adjacent Peru, terrestrial at 1450 m altitude. Flowering in February.



RECOGNITION: *Epidendrum humidicolum* belongs to the Pseudepidendrum Group which is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, usually apical inflorescence, the filiform petals and the lip usually 3-lobed (with 3 parallel fleshy keels), the apical lobe often bifurcate, the "bird-wing" type pollinia and Paniculatum Group which has bicolor flowers (generally green with the lip and apex of the column white) the disc sometimes marked with purple to red. The species is recognized by the medium sized plants (to 70 cm tall) with an erect, paniculate inflorescence with up to 160 flowers, sepals 10 mm long, the 3-lobed lip with sub-quadrate lateral lobes, and the mid-lobe short, bifid and strongly divaricate. *Epidendrum crassinervium* Kraenzlin, has plants of the same size but more robust, thicker stems, ovary ornamented and the pollinia somewhat flattened but not "bird-wing" type. *Epidendrum yungasense* Rolfe is vegetatively very similar, but the plants are smaller (ca. 40 cm tall), sepals 6-8 mm long.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *humidus*, humid, wet, and the suffix *–cola*, dweller, living in humid places.

REFERENCE: Mansfeld, R., 1929, Figuren Atlas zu den Orchideenfloren der Südamerikanischen Kordillerenstaaten von R. Schlechter, **Repert. Spec. Nov. Regni Veg., Beih.** 57: fig. nr. 540.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM ILENSE Dodson **Plate 1341**

EPIDENDRUM ILENSE Dodson, Selbyana 2(1): 51. 1977.

Type: ECUADOR: Los Ríos; Montañas de Ila, km 58 Quevedo-Santo Domingo, on side road from Patricia Pilar to 24 de Mayo, km 12, 540 m, 30 May 1976, ***Calaway H. Dodson 6094.*** Holotype: SEL! Isotypes: AAU! CAS! Clonotype: hort, SEL 91-76-4, Mexico City, pressed 19 July 1986, *Dodson 6094* sub *Hágsater 6053*, AMO! (Illustration voucher).

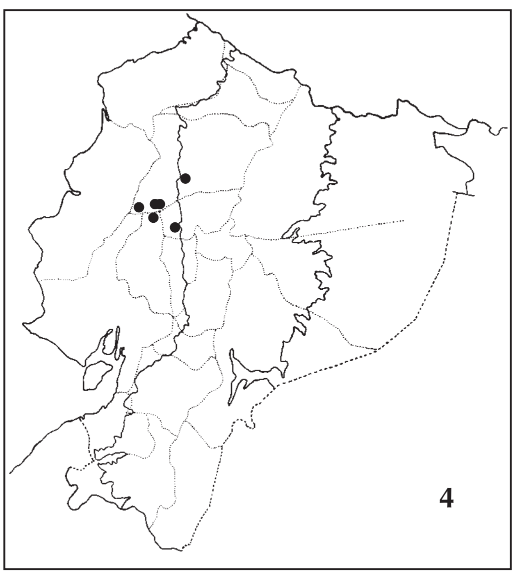
Hierba epífita, simpodial, cespitosa, 40-90 cm de alto. **Raíces** de la base de la planta y de la base de los keikis, delgadas, blancas, 0.5-1 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente comprimidos, suberectos, 30-78 x 0.4-1.0 cm; produciendo keikis a lo largo de la mitad apical de tallos que han producido floraciones sucesivas en años anteriores; cubiertos en la base por vainas tubulares, no foliares, escariosas, 3 cm de largo. **Hojas** 13-18, distribuidas a lo largo del tallo, alternas, articuladas; vaina tubular, ligeramente ancipitosa, finamente estriada, 1.5-3.3 x 0.5-1 cm; lámina angostamente elíptica, aguda, diminutamente apiculada, margen entero, 9-18 x 1.5-4 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical y/o lateral, pauciflora, subcapitada, florece durante varios años a partir del mismo pedúnculo y entonces pluriracemosa, colgante; la apical de 13.5-30 cm de largo; pedúnculo lateralmente aplanado, ancipitoso, elongado, arqueado nutante, 18-29 cm de largo; cubierto en su totalidad por 9 brácteas tubulares, conduplicadas, agudas, ancipitosas, imbricadas, decrecientes en tamaño (las apicales muy cortas), 1-7 cm de largo; las laterales 5-11 cm de largo. **Bráctea floral** mucho más pequeña que el ovario, triangular, acuminada, abrazadora, 3-5 mm de largo. **Flores** 3-4[7], simultáneas, sépalos, pétalos y labelo blanco verdoso, los sépalos dorsalmente teñidos de púrpura; columna verdosa en la mitad basal y blanca en la mitad apical, labelo inmaculado; fragancia suave, herbal. **Ovario** terete, delgado, ligeramente dilatado en los 2/3 apicales, no ornamentado, de color verde purpúreo, 16-24 mm de largo. **Sépalos** extendidos, libres, obovados, obtusos, 5-nervados, margen entero, extendido, 11-12 x 5-6 mm; los laterales oblicuos. **Pétalos** ascendentes, libres, linear oblanceolados, 3-nervados, margen entero, extendido, 11-12 x 2 mm. **Labelo** unido a la columna, entero, truncado en la base, margen apical largamente fimbriado, 2 x 3 mm; bicalloso, los callos cortos, sublaminares, bajos e incipientes, ocultos bajo el ápice de la columna; disco con 3 quillas delgadas, alargadas hasta el seno apical. **Columna** delgada, gradualmente dilatada hacia el ápice, recta, 10 mm de largo; el ápice con un par de alas prominentes, oblicuamente truncadas. **Clinandrio** reducido, margen entero. **Antera** ovoide, 4-locular. **Polinios** 4, obovoides, algo lateralmente comprimidos; caudículas dos pares, granulosas, más largas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando la mitad del largo de la cavidad estigmática. **Nectario** penetrando la mitad del ovario, delgado, no ornamentado. **Cápsula** no vista.

Epiphytic, sympodial, caespitose **herb. Roots** from the base of the plant and from keikis, thin, white. **Stems** simple, cane-like, laterally compressed, sub-erect, producing keikis along the apical half of the stems that have flowered during previous years; base covered by tubular, non-foliar, scarious, sheaths. **Leaves** 13-18, distributed throughout the stem, alternate, articulate; sheath tubular, slightly ancipitose, minutely striated; blade narrowly elliptic, acute, minutely apiculate, margin entire. **Inflorescence** apical and/or lateral, few-flowered, sub-capitate, flowering during several years from the same peduncle and then pluri-racemose, arching-nutant; peduncle laterally compressed, ancipitose, elongate; totally covered by 9 tubular, conduplicate, acute, ancipitose, imbricating bracts, decreasing in size (the apical ones very short). **Floral bracts** much shorter than the ovary, triangular, acuminate, amplexicaul. **Flowers** 3-4[7], simultaneous, sepals, petals and lip greenish white, the sepals dorsally tinged purple; basal half of the column greenish, apical half white, lip immaculate; fragrance soft, herbal. **Ovary** terete, thin, slightly dilated along the apical 2/3, unornamented, greenish purple. **Sepals** spreading, free, obovate, obtuse, 5-veined, margin entire, spreading; lateral sepals oblique. **Petals** ascending, free, linear-oblanceolate, 3-veined, margin entire, spreading. **Lip** united to the column, entire, base truncate, apical margin deeply fimbriate; bicallose, the calli short, sub-laminar, low, hidden beneath the apex of the column; disc with 3 thin elongate keels, reaching the apical sinus. **Column** thin, gradually dilated towards the apex, straight; apex with a pair of prominent, obliquely truncate wings. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, 4-celled. **Pollinia** 4, obovoid, somewhat laterally compressed; caudicles two pairs, granulose, longer than the pollinia. **Rostellum** apical, slit. **Nectary** penetrating half the ovary, thin, unornamented.

OTHER SPECIMENS: ECUADOR: Cultivated at Selby Botanical Gardens, SEL 84-666, XI 1985, *Christenson 1434*, SEL! **Pichincha**: Centinela on the Mts. de Ila, 650 m, 22 XI 1987, *Dodson 17319*, MO! 8 km W of Alluriquín, above Hotel Tinalandia, 700 m, X 1981, *Luther 647*, SEL! 12 km E of Patricia Pilar, 650 m, 9 IV 1977, *Madison 3794*, SEL! Centinela, km 14 E of Patricia Pilar, 540 m, 11 VIII 1987, *Whitten 93022*, QCNE! **Cotopaxi**: Río Guapara, ca. 20 km NW El Corazón, ca. 250 m, 22 VI 1967, *Sparre 17257*, S!

OTHER RECORDS: COLOMBIA: Without locality data, digital image published in Gallery of Colombian Orchids CD, Bogotá, 2007. Pedro Ortiz Valdivieso, (pers. comm.) indicates that photographs were taken from cultivated plants, but adds that Tomás Toulemonde has indicated that the species is found in southern Colombia.

DISTRIBUTION AND ECOLOGY: Known only from the lower Pacific slopes of the Andes in central Ecuador, epiphytic at 250-700 m altitude. Flowering from April to November.



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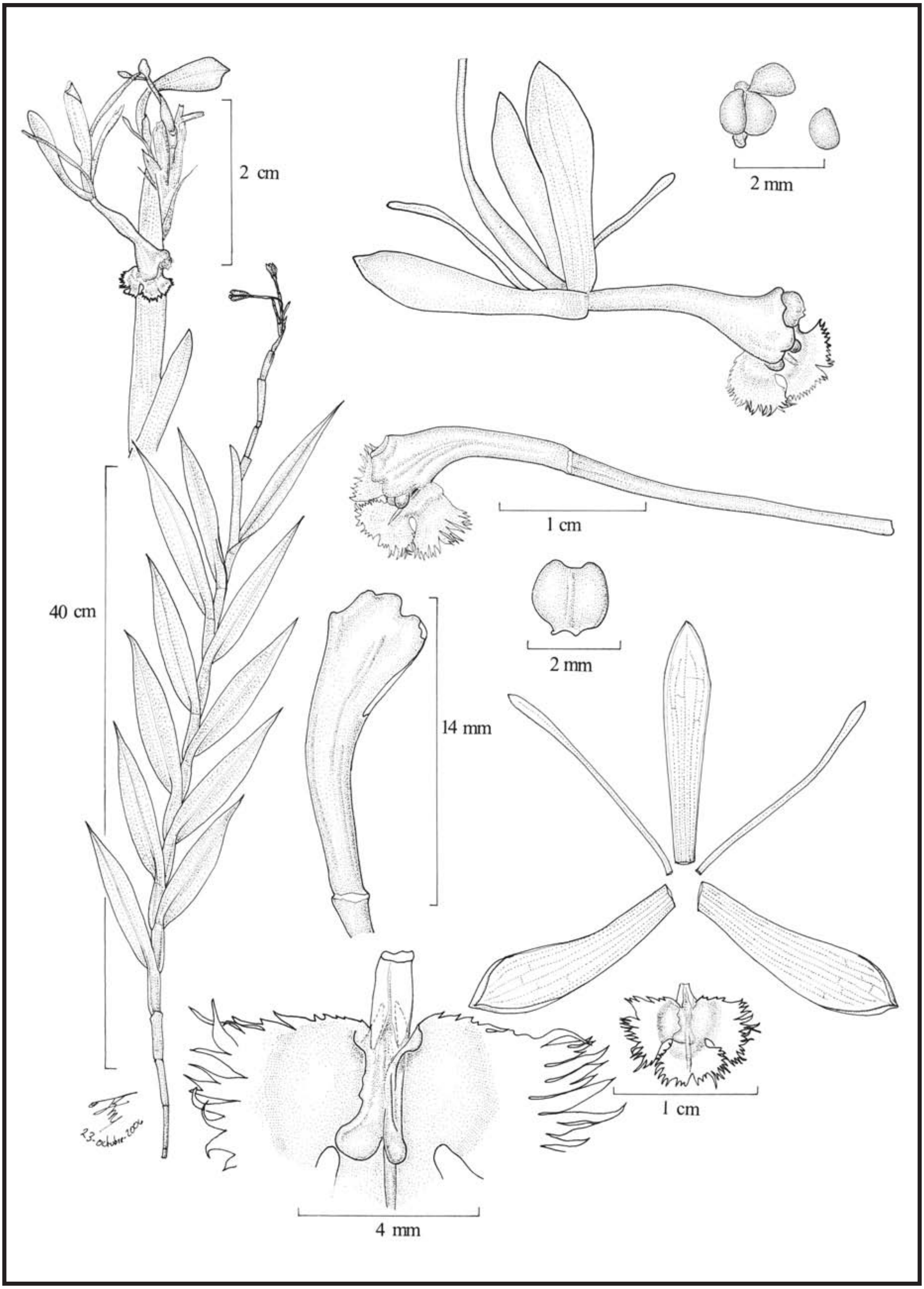
RECOGNITION: *Epidendrum ilense* belongs to the Jatunsachanum Group, which is recognized by the caespitose habit, numerous narrow leaves, apical inflorescence from young stems, with lateral inflorescences in mature plants of some species, the inflorescences producing new racemes through time, the lip with fimbriate margins, the pollinia obovoid, not "bird-wing" type. The species is recognized by the sub-capitate, few-flowered inflorescences, the flowers simultaneous, greenish white, the sepals dorsally tinged purple, lip entire, immaculate, with a pair of small calli, margin deeply fimbriate. *Epidendrum jatunsachanum* Dodson & Hágsater has a racemose, apical inflorescence with successive flowers, the lip 3-obed with purple spots on the disc of the lip, and a pair of sub-globose, priminent calli. *Epidendrum hajekii R.Vásquez & Dodson* has racemose inflorescences, the sepals linear-oblanceolate, lip 3-lobed, immaculate, with a pair of evident calli.

CONSERVATION STATUS: Endangered, the species is known from a very restricted area which is subject to logging. It has been reproduced in cultivation and is widely available and desirable as a cultivated plant.

ETYMOLOGY: In reference to the type locality, on the Ila Mountains, Los Rios province, Ecuador.

REFERENCES: Baumbach, N., 2002, *Epidendrum ilense*, **Die Orchidee** 53(6): 736. Dodson, C. H. & P. M. Dodson, 1980, *Epidendrum ilense* in C. H. Dodson (ed.), **Icon. Pl. Trop.** 1: pl. 81. Dodson, C. H., 1981, *Epidendrum ilense*-the saving of a truly endangered species, **American Orchid Society Bulletin** 50(9): 1083-1086. Robbins, S. & S. Bell, 1991. *Epidendrum ilense*, **The Kew Magazine** 8(1):5-8.

Authors: E. Santiago & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM JATUNSACHANUM Dodson & Hágsater **Plate 1342**

EPIDENDRUM JATUNSACHANUM Dodson & Hágsater, Orquideología 19(2): 142. 1994.
Type: ECUADOR: Morona-Santiago: Méndez to Macas, Río Upano, 700 m, January 1989, ***Alex Hirtz 4043, Carlyle A. Luer, Jane Luer, Phillips Jessup, Anne Jessup & S. Ortega***. Holotype: MO!

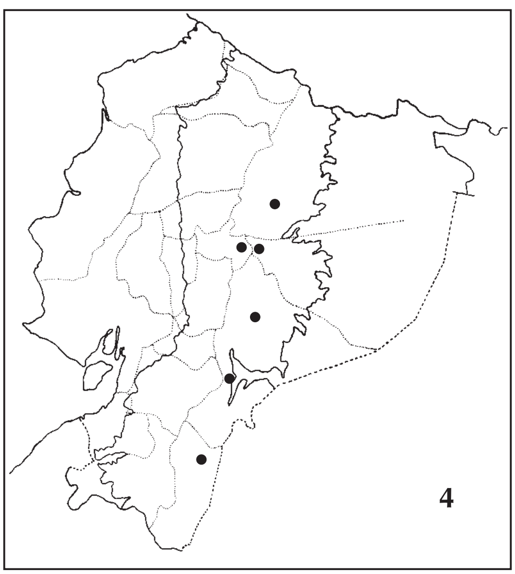
Hierba epífita, simpodial, cespitosa, ca. 30-60 cm de alto. **Raíces** basales, delgadas. **Tallos** sencillos, tipo caña, erectos, rectos, algo lateralmente comprimidos en la base y ancipitosos hacia el ápice, 25-40 x 0.5-0.1 cm; cubiertos en la base por vainas tubulares no foliáceas, 2-2.5 cm de largo. **Hojas** 6-11, distribuidas en los 2/3 apicales del tallo, alternas, articuladas; vaina tubular, ancipitosa, 2-3 x 0.6-1 cm; lámina oblongo-elíptica, acuminada, diminutamente apiculada, subcoriácea, margen entero, 8.5-12 x 1.6-2 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, pauciflora, racemosa, florece durante varios años a partir del mismo pedúnculo y entonces pluriracemosa, 10-18 cm de largo; pedúnculo lateralmente aplanado, ancipitoso, elongado, erecto, recto, 16 cm de largo; cubierto por 6 brácteas tubulares en la mitad basal y conduplicadas en la mitad apical, agudas, ancipitosas, algo imbricadas, decrecientes en tamaño (las apicales más cortas), 2-6.5 cm de largo; raquis muy corto, 5-10 mm de largo. **Bráctea floral** mucho más pequeña que el ovario, triangular, aguda, abrazadora, 6 mm de largo. **Flores** solitarias, sucesivas, sépalos púrpura verdoso dorsalmente y pardo amarillentos en la superficie ventral; pétalos y mitad basal de la columna verdes, labelo y mitad apical de la columna blancos con manchas amoratadas; sin fragancia. **Ovario** terete, delgado, no inflado, no ornamentado, 22 mm de largo. **Sépalos** reflexos, libres, carnosos, angostamente oblanceolados, obtusos, 7-nervados, margen entero, extendido, 16 x 3-4 mm. **Pétalos** extendidos, libres, membranáceos, lineares, 1-nervados, margen entero, extendido, 16 x 0.6 mm. **Labelo** unido a la columna, 3-lobado, truncado en la base, margen fimbriado, 7 x 9.5 mm; bicalloso, los callos prominentes, suborbiculares, alargados hasta la base del lóbulo medio; disco con una quilla intercallosa, delgada, alargada hasta el seno apical; lóbulos laterales oblicuamente rectangulares, 4.5 x 4.5 mm; lóbulo medio flabeliforme, ligeramente emarginado, formando un par de lóbulos subcuadrados, 3 x 5 mm. **Columna** delgada, ligeramente arqueada, 14 mm de largo. **Clinandrio** reducido, margen entero. **Antera** ovoide, 4-locular. **Polinios** 4, obovoides, algo lateralmente comprimidos; caudículas suaves y granulosas, ligeramente más largas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma**, **Nectario** y **Cápsula** no vistos.

Epiphytic, sympodial, caespitose **herb. Roots** basal, thin. **Stems** simple, cane-like, erect, straight, somewhat laterally compressed at the base, ancipitose towards the apex; base covered by tubular, non-foliar sheaths. **Leaves** 6-11, distributed along the apical 2/3 of the stem, alternate, articulate; sheath tubular, ancipitose; blade oblong-elliptic, acuminate, minutely apiculate, sub-coriaceous, margin entire. **Inflorescence** apical, few-flowered, racemose, flowering during several years from the same peduncle and then pluri-racemose; peduncle laterally compressed, ancipitose, elongate, erect, straight; covered by 6 tubular, somewhat imbricating bracts, decreasing in size, the basal half of the bracts tubular, the apical half conduplicate, ancipitose, acute; rachis short. **Floral bracts** much shorter than the ovary, triangular, acute, amplexicaul. **Flowers** solitary, successive, sepals dorsally greenish purple, yellowish brown ventrally; petals and basal half of the column green, lip and apical half of the column white with purple spots; without fragrance. **Ovary** terete, thin, not inflated, smooth, long. **Sepals** reflexed, free, fleshy, narrowly oblanceolate, obtuse, 7-veined, margin entire, spreading. **Petals** spreading, free, membranaceous, linear, 1-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base truncate, margin fimbriate; bicallose, the calli prominent, sub-orbicular, elongate, reaching the base of the mid-lobe; disc with a single, narrow, elongate keel reaching the apical sinus; lateral lobes obliquely rectangular; mid-lobe flabellate, slightly emarginate, forming a pair of sub-quadrate lobes.

OTHER SPECIMENS: ECUADOR: Without locality, *Sodiro s.n.*, QPLS x2! **Tungurahua:** Baños to Puyo, Río Topo, 1100 m, 6 III 1963, *Dodson 2348*, QCA! SEL! (Illustration voucher). **Morona-Santiago:** low hills west of Río Upano, along Río Chupiangas, 2500-3200 ft, 20 XI 1944, *Prieto CHUP-21*, AMES! NY! **Zamora-Chinchipe:** road from Los Encuentros to Río Machinaz at NW base of Cordillera del Condor, 1350-1650 m, 16 V 1988, *Hirtz 3768*, MO! **Pastaza:** road from Baños to Puyo, 8 X 1961, *Dodson 922*, SEL!

OTHER RECORDS: ECUADOR: Morona-Santiago: Limón, Hort. Orquídeas de los Andes, 1000 m, *Sánchez sub Hágsater 13886*, spirit and digital image, AMO! **Napo:** Jatun Sacha, 450 m, *Suarez (Lindberg) 73*, xerox of illustration, AMO! **Zamora-Chinchipe:** road from Los Encuentros to Río Machinaz at NW base of Cordillera del Condor, 1350-1650 m, 16 V 1988, *Hirtz 3768*, spirit, AMO!

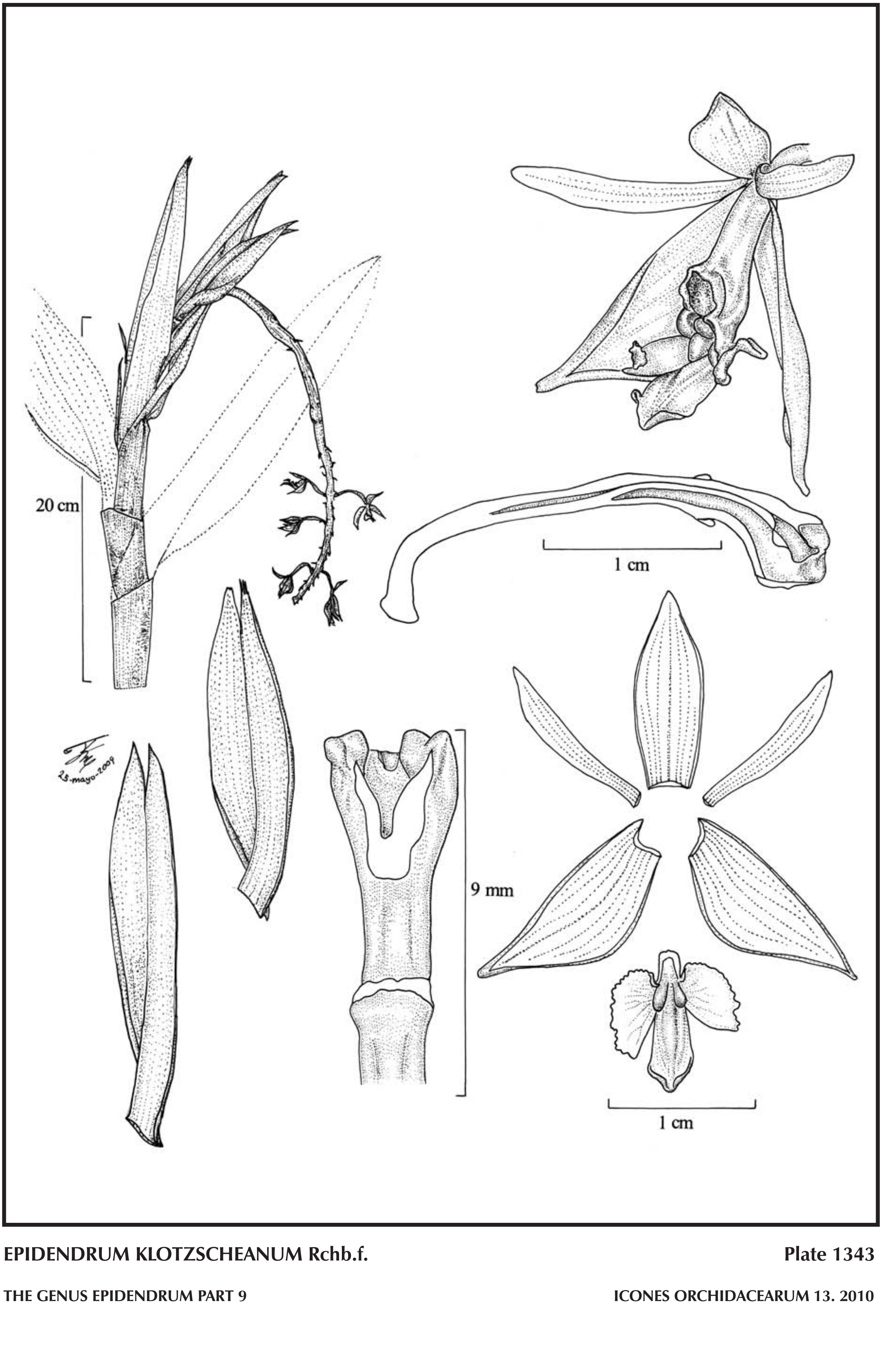
DISTRIBUTION AND ECOLOGY: From the Amazon basin along the eastern slope of the Eastern Cordillera of the Andes in Ecuador, epiphyte at 400-1600 m altitude. Flowering October to May.



RECOGNITION: *Epidendrum jatunsachanum* belongs to the Jatunsachanum Group, which is recognized by the caespitose habit, numerous narrow leaves, apical inflorescence in young stems, and lateral inflorescences in mature plants of some species, the inflorescences producing new racemes through time, the lip with margins fimbriate, the pollinia obovoid, not "bird-wing" type. The species is recognized by the oblong-elliptic leaves, 8.5-12 x 1.6-2 cm; apical inflorescence producing successive flowers, one at a time, the white lip with purple spots on the disc, margin fimbriate. *Epidendrum hajekii* R.Vásquez & Dodson has linear-lanceolate leaves 9.5-18 x 0.7-1 cm; the apical and lateral inflorescence generally 2-flowered, the flowers simultaneous. *Epidendrum ilense* Dodson has narrowly elliptic leaves 9-18 x 1.5-4 cm; a sub-capitate apical and lateral inflorescences with few simultaneous flowers, the lip entire, immaculate with the margin long-fimbriate. *Epidendrum pseudopaniculatum* Dodson has apical and lateral, racemose inflorescences with numerous simultaneous greenish white flowers, the lip with 5 purple lines on the keels of the disc, pollinia "bird-wing" type.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to the Jatun Sacha biological field station in the province of Napo, eastern Ecuador.



EPIDENDRUM KLOTZSCHEANUM Rchb.f. **Plate 1343**

EPIDENDRUM KLOTZSCHEANUM Rchb.f., Linnaea 22(6): 838. 1849.

Type: VENEZUELA: Mérida: Sierra Nevada, ***Moritz 1069.*** Holotype: W-R! Isotype: W-R 4730! (only flowers in envelope mounted on the right-hand side and illustration).

Synonyms: *Epidendrum raphidophorum* Lindl., Fol. Orchid. *Epidendrum*: 52. 1853. Type: VENEZUELA: Caracas: the Silla, 6500 ft, ***Nicholas Funk and Louis Schlim 182.*** Holotype: K-L sketch of holotype, W-R 5802! Isotype: W-R 4158! (Only the pair of flowers on the right-hand side).

Epidendrum ochriodes Lindl. Fol. Orchid. *Epidendrum*: 52. 1853. Type: COLOMBIA: [Norte de Santander:] at Matanzas, in Pamplona, 7000 ft, ***Louis Schlim 136.*** Holotype: K-L (photo at AMES!) Isotype: W-R 4726! (only the pair of flowers mounted at the upper left-hand corner).

Epidendrum ernstii Schltr., Repert. Spec. Nov. Regni Veg., Beih. 6: 52. 1919. Type: VENEZUELA: Distrito Federal: Caracas, ***A. Ernst s.n.*** Holotype: B, destroyed. Illustration, AMES!

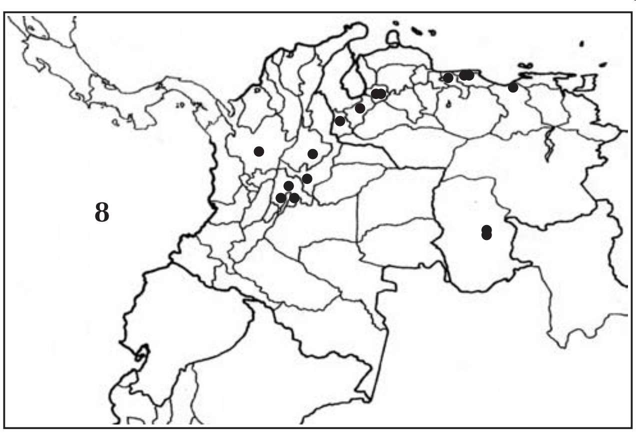
Hierba terrestre, simpodial, cespitosa, de 1.0-1.5 m de alto. **Raíces** basales, gruesas. **Tallos sencillos,** tipo caña, lateralmente comprimidos, erectos, rectos, 80-135 x 1-1.9 cm. **Hojas** numerosas, suberectas con respecto al tallo, alternas, articuladas, coriáceas, algo conduplicadas en la base; vaina tubular, finamente estriada, 3.5-8 x 1-1.9 cm; lámina lanceolada, ápice subagudo, cortamente bilobado, margen entero, 17.5-25 x 2.2-4 cm. **Brácteas espatáceas** 1-3, tubulares, abiertas de un lado en la mitad apical y entonces conduplicadas, acuminadas, al extenderse lanceoladas, de color verdoso teñidas de purpúreo, 9-21 x 2.4-4.8 cm (extendida). **Inflorescencia** apical, racemosa, arqueado-nutante, pluriflora, densa, ca. 15-22 cm de largo; pedúnculo engrosado, lateralmente aplanado, 6 cm de largo. **Brácteas florales** prominentes, pero más cortas que el ovario, linear-lanceoladas, acuminadas, abrazadoras, 8-14 mm de largo. **Flores** ca. 50, simultáneas, resupinadas, carnosas, de color fucsia a amarillentas teñidas de rosado, sin datos de fragancia. **Ovario** corto, terete, ligeramente dilatado hacia la mitad apical, no ornamentado, 25 mm de largo. **Sépalos** libres, entreabiertos, elípticos, agudos, apiculados, 7-nervados, margen entero, ligeramente involuto en el ápice, 14 x 5 mm; los **laterales** oblicuos. **Pétalos** extendidos, libres, angostamente oblanceolados, subagudos, 3-nervados, ligeramente oblicuos, margen entero, extendido, 11 x 2 mm. **Labelo** unido a la columna, trilobado, cordado en la base, 9 x 8 mm; bicalloso, los callos prominentes, carnosos, algo lateralmente aplanados; disco con 3 quillas carnosas, delgadas, que se desvanecen antes de llegar al ápice del lóbulo medio; lóbulos laterales oblicuamente ovados, margen diminutamente eroso, revoluto en los márgenes laterales, 3.7 x 6 mm; lóbulo medio oblongo, con el ápice truncado, diminutamente apiculado, el margen basal entero y ligeramente revoluto, el margen apical ligeramente eroso, algo involuto, 4.5 x 2.8 mm. **Columna** recta, delgada en la mitad basal y gradualmente más amplia en la mitad apical, el ápice con los bordes laterales truncados, 7 mm de largo. **Clinandrio** corto, margen entero. **Antera** reniforme, 4-locular. **Polinios** 4, obovoides; caudículas suaves y granulosas, del mismo largo de los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, de la mitad del largo de la cavidad estigmática. **Nectario** poco profundo, penetrando ¼ del ovario, no inflado, no ornamentado. **Cápsula** elipsoide, con el perianto persistente, 5 x 1.3 cm; pedicelo 2 cm de largo; cuerpo 2.5-3 x 1-1.3 cm; cuello apical 6-7 mm de largo.

Terrestrial, sympodial, caespitose, tall **herb**. **Roots** basal, thick. **Stems** simple, cane-like, laterally compressed, erect, straight. **Leaves** numerous, sub-erect, alternate, articulate, coriaceous, base somewhat conduplicate; sheath tubular, minutely striated; blade lanceolate, apex sub-acute, short bilobed, margin entire. **Spathaceous bracts** 1-3, tubular, open on one side along the upper half and then conduplicate, acuminate, lanceolate when spread, greenish tinged with purple. **Inflorescence** apical, racemose, arching-nutant, densely many-flowered; peduncle thickened, laterally compressed. **Floral bracts** prominent but shorter than the ovary, linear-lanceolate, acuminate, amplexicaul. **Flowers** ca. 50, simultaneous, resupinate, fleshy, fuchsia to yellowish tinged with pink. **Ovary** short, terete, slightly dilated towards the apical half, unornamented. **Sepals** free, partly spreading, elliptic, acute, 7-veined, margin entire, slightly involute at the apex. **Petals** spreading, free, narrowly oblanceolate, sub-acute, 3-veined, slightly oblique, margin entire, spreading. **Lip** united to the column, 3-lobed, base cordate; bicallose the calli prominent, fleshy, somewhat laterally flattened; disc with 3 fleshy, narrow keels which disappear before reaching the apex of the lip; lateral lobes obliquely ovate, basal margin erose, lateral margins revolute; mid-lobe oblong, the apex truncate, minutely apiculate, basal margin entire and slightly revolute, apical margin slightly erose, somewhat involute. **Column** straight, basal half thin, gradually dilated towards the apex, the apical sides truncate. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, caudicles soft and granulose, as long as the pollinia. **Clinandrium-hood** short, margin entire. **Rostellum** apical, slit. **Nectary** shallow, penetrating ¼ of the ovary, not inflated, unornamented. **Capsule** ellipsoid, perianth persistent, pedicel long, apical neck short.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Ranging across northern Colombia and along the Andes to Caracas, with a couple of collections from southern Venezuela on the Cerro Marahuaca; terrestrial at 2100-3100 m altitude. Flowering August to February.

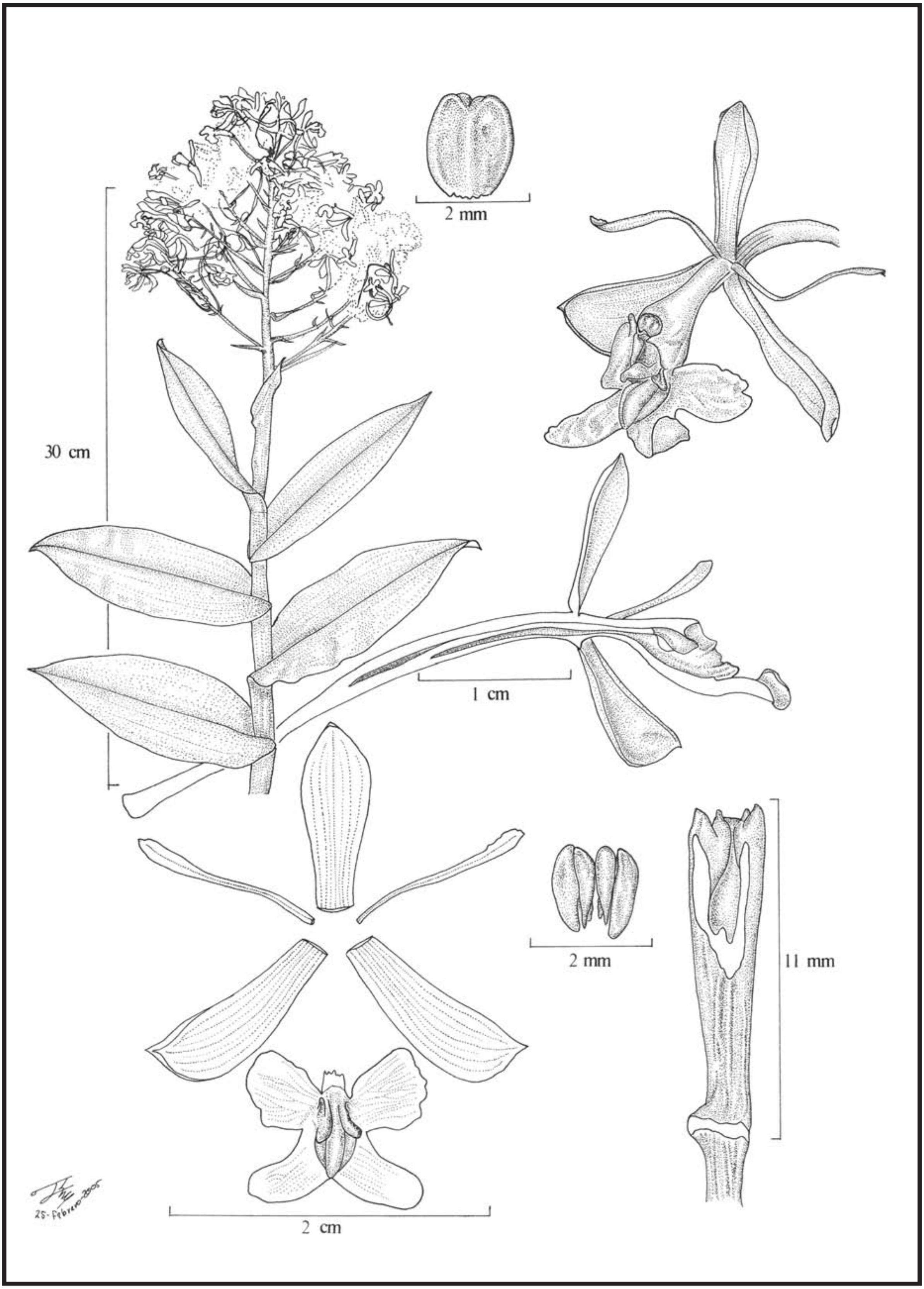
RECOGNITION: *Epidendrum klotzscheanum* belongs to the Alpicolum Group and Subgroup which is characterized by the simple, cane-like stems, long, narrow 1-3 spathaceous bracts, fox-tail-like inflorescence and numerous flowers with fleshy lip. The species is recognized by the very tall plants, (up to ca. 1.5 m tall) with numerous sub-erect, lanceolate leaves, the arching-nutant, densely many-flowered racemose inflorescence, the flowers fuchsia to yellowish tinged with pink, sepals 14 mm long, the 3-lobed lip, the lateral lobes with the margin slightly erose and revolute, the mid-lobe oblong with the apex truncate. *Epidendrum melanoxeros* Hágsater & Dodson has shorter leaves, 12.5-14.5 cm long, the apex rounded, up to 20 yellowish green flowers, with the apex of the lip obtuse. *Epidendrum morilloi* Hágsater & E.Santiago is distinguished by the arching-horizontal stem, the paniculate inflorescence (though the branches are short and few), the creamy white sepals and petals, with a snow-white lip and column, the flowers comparatively smaller, sepals 8-10 mm long. *Epidendrum charpinii* Hágsater & E.Santiago has a racemose inflorescence, ochre colored flowers, the lip somewhat paler, with the mid-lobe of the lip somewhat apically rhombic, widened near the acute apex, sepals erect and spreading.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Johann Friedrich Klotzsch, 1805-1860, German pharmacist and botanist, his main work relates to mushrooms, and worked in the Botanical Museum Berlin.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM LAEVE Lindl. **Plate 1344**

EPIDENDRUM LAEVE Lindl., Bot. Reg. 30: misc. pg. 24. 1844.

Type: COLOMBIA: [Cauca]; In ascensu ad Sotará, Prov. Popayán, 1842, ***Theodor Hartweg 1425.*** Holotype: ex Herb. Hook., K-L! Isotypes: ex Herb. Bentham, K-L! W-R 49541! [Not: ad Montaña de Menezes et Berrucos, Prov. Pasto [Nariño]; see Bentham, 1846].

Synonym: *Epidendrum ionodesme* Schltr., Repert. Sp. Nov. Regni Veg., Beih. 7: 134. 1920. Type: COLOMBIA: Cauca: Cordillère Occidentale versant est, 2200-2800 m, 27 Novembre 1899, ***E. Langlassé 98***. Holotype: B, destroyed; illustration of floral details published in Mansfeld, 1929 (not very representative). Isotypes: AMES! G x2! (photo AMES! SEL!) K-L! P x2!

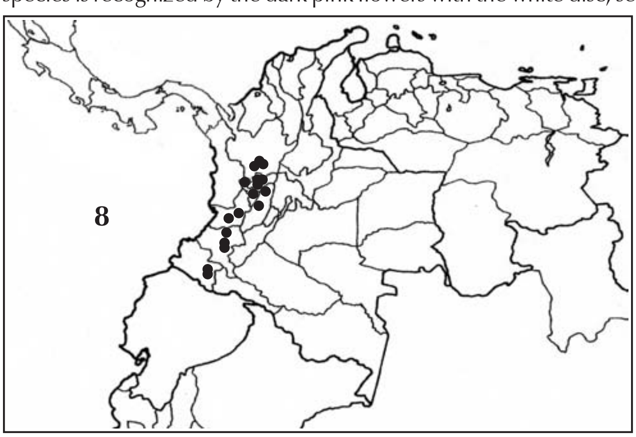
Hierba epífita o terrestre, simpodial, cespitosa, erecta, 60-135 cm de alto. **Raíces** basales, carnosas, 2-3 mm de grosor. **Tallos** sencillos, tipo caña, teretes, delgados, erectos, rectos, 40-90 x 0.6-0.9 cm; cubiertos en la mitad basal por vainas tubulares, no foliares, escariosas y fibrosas con el tiempo, 4.5-6 cm de largo. **Hojas** 13, distribuidas en la mitad apical del tallo, alternas, articuladas; vainas tubulares, finamente estriadas, 2.3-5.5 x 0.6-1.0 cm; lámina oblongo lanceolada, aguda, subcoriácea, margen entero, 8-18.5 x 2.5-4.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, paniculada, erecta, pluriflora, densa, 20-45 cm de largo; pedúnculo delgado, lateralmente aplanado, recto, 8-15 cm de largo; cubierto por 2 o 4 brácteas tubulares, escariosas, agudas, parcialmente imbricadas, 5-13 cm de largo; raquis terete, con 3 a 10 racimos cortos y subextendidos, multifloros, densos; cada uno de ellos con una bráctea basal angostamente triangular, acuminada, 1.2-4.5 cm de largo. **Brácteas florales** mucho más cortas que el ovario, angostamente triangulares, acuminadas, abrazadoras, 3-9 mm de largo. **Ovario** terete, delgado, no inflado, escasamente papiloso, 15-37 mm de largo. **Flores** 50-180, simultáneas, resupinadas, de color rosa subido, labelo rosado con el callo y disco blancos; sin datos de fragancia. **Sépalos** extendidos, libres, carnosos, obovado oblanceolados, obtusos, apiculados, 3-nervados, dorsalmente escasamente papilosos, margen entero, 9-10 x 3-4 mm; los **laterales** ligeramente oblicuos. **Pétalos** entreabiertos, libres, linear oblanceolados, redondeados, 1-nervados, margen entero, extendido, 9-10 x 1 mm. **Labelo** unido a la columna, 3-lobado, profundamente cordado en la base, en posición natural extendido con los lóbulos apicales dirigidos hacia arriba, 7-9 x 8-12 mm; bicalloso, los callos prominentes, delgados, subcorniformes, alargados hasta ca. de la base del lóbulo medio; disco provisto de tres quillas paralelas, carnosas, todas alargadas hasta el seno apical; lóbulos laterales dolabriforme-trapezoides, algo falcados, margen irregular, 4-5 x 5-6.5 mm; lóbulo medio profundamente bilobado, formando un par de lóbulos linear oblongos, redondeados, divergentes, margen entero, 2-4 x 7-12 mm. **Columna** delgada, ligeramente arqueada, el ápice bidentado, con un par de alas laterales redondeadas, 8-9 mm de largo. **Clinandrio** reducido, margen entero. **Antera** obovoidea, 4-locular, truncada en el ápice. **Polinios** 4, tipo "ala de pájaro" fuertemente comprimidos lateralmente, el par interior más pequeño; caudículas laminares. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** pequeños, de ¼ del largo de la cavidad estigmática. **Nectario** penetrando hasta la mitad del ovario, no inflado, liso. **Cápsula** no vista.

Epiphytic or terrestrial, sympodial, caespitose, erect, tall **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, terete, erect, straight; the base covered by tubular, non-foliar, scariose sheaths, becoming fibrous with time. **Leaves** 13, distributed along the apical half of the stem, alternate, articulate; sheaths tubular, minutely striated; blade oblong-lanceolate, acute, sub-coriaceous, margin entire. **Inflorescence** apical, paniculate, erect, densely many-flowered; peduncle thin, laterally compressed, straight, covered by 2 or 4 tubular, scariose, acute, partially imbricating bracts; rachis terete, with 3-10 short, somewhat spreading, densely many-flowered racemes, each subtended by a long, narrowly triangular, acuminate bract. **Floral bracts** much shorter than the ovary, narrowly triangular, acuminate, amplexicaul. **Ovary** terete, thin, not inflated, scarcely papillose. **Flowers** 50-180, simultaneous, resupinate, dark pink, lip pink with the calli and disc white. **Sepals** spreading, free, fleshy, obovate-oblanceolate, obtuse, apiculate, 3-veined, dorsally scarcely papillose, margin entire; lateral sepals slightly oblique. **Petals** partly spreading, free, linear-oblanceolate, rounded, 1-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base deeply cordate, spreading in natural position, with the apical lobes turned upwards; bicallose, the calli prominent, thin, somewhat horn-like, elongate to near the base of the mid-lobe; disc provided with 3 parallel, fleshy keels, all reaching the apical sinus; lateral lobes dolabriform-trapezoid, somewhat falcate, margin irregular; mid-lobe deeply bilobed, forming a pair of linear-oblong, rounded, divergent lobes, margin entire. **Column** thin, slightly arching, the apex bidentate, with a pair of rounded, lateral wings. **Clinandrium-hood** reduced, margin entire. **Anther** obovoid, 4-celled, apex truncate. **Pollinia** 4, "bird wing" type, strongly laterally compressed, the inner pair smaller; caudicles laminar. **Rostellum** sub-apical, slit. **Nectary** penetrating as far as the middle of the ovary, not inflated, smooth.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Widespread in Colombia, from Antioquia to Nariño, epiphytic or terrestrial, at 1200-2800 m altitude. Flowering throughout the year.

RECOGNITION: *Epidendrum laeve* belongs to the Pseudepidendrum Group which is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, apical inflorescence, lacking a spathaceous bract, the petals filiform and the lip usually 3-lobed, with 3 parallel fleshy keels, the apical lobe often bifurcate, and the pollinia "bird-wing" type and Porphyreum Subgroup which has flowers colored reddish orange, deep purple or lilac-pink, the calli generally prominent, sometimes horn-like. The species is recognized by the dark pink flowers with the white disc, sepals 9-10 x 3-4 mm; 3-lobed lip with the basal lobes slightly falcate (as wide between the lateral lobes as between the apical lobes), the bidentate, 8-9 mm-long column with a pair of prominent rounded wings at the apex. *Epidendrum porphyerum* Lind. has similarly colored flowers, but these are larger, (sepals 13-15 mm long), and the apical lobe of the lip is sub-deltate, with the apex widely emarginate; the 10 mm long column has a pair of short, rounded wings. *Epidendrum arnoldi* Schltr. has lilac-pink flowers, sepals 8 mm long, and the column 6 mm long.

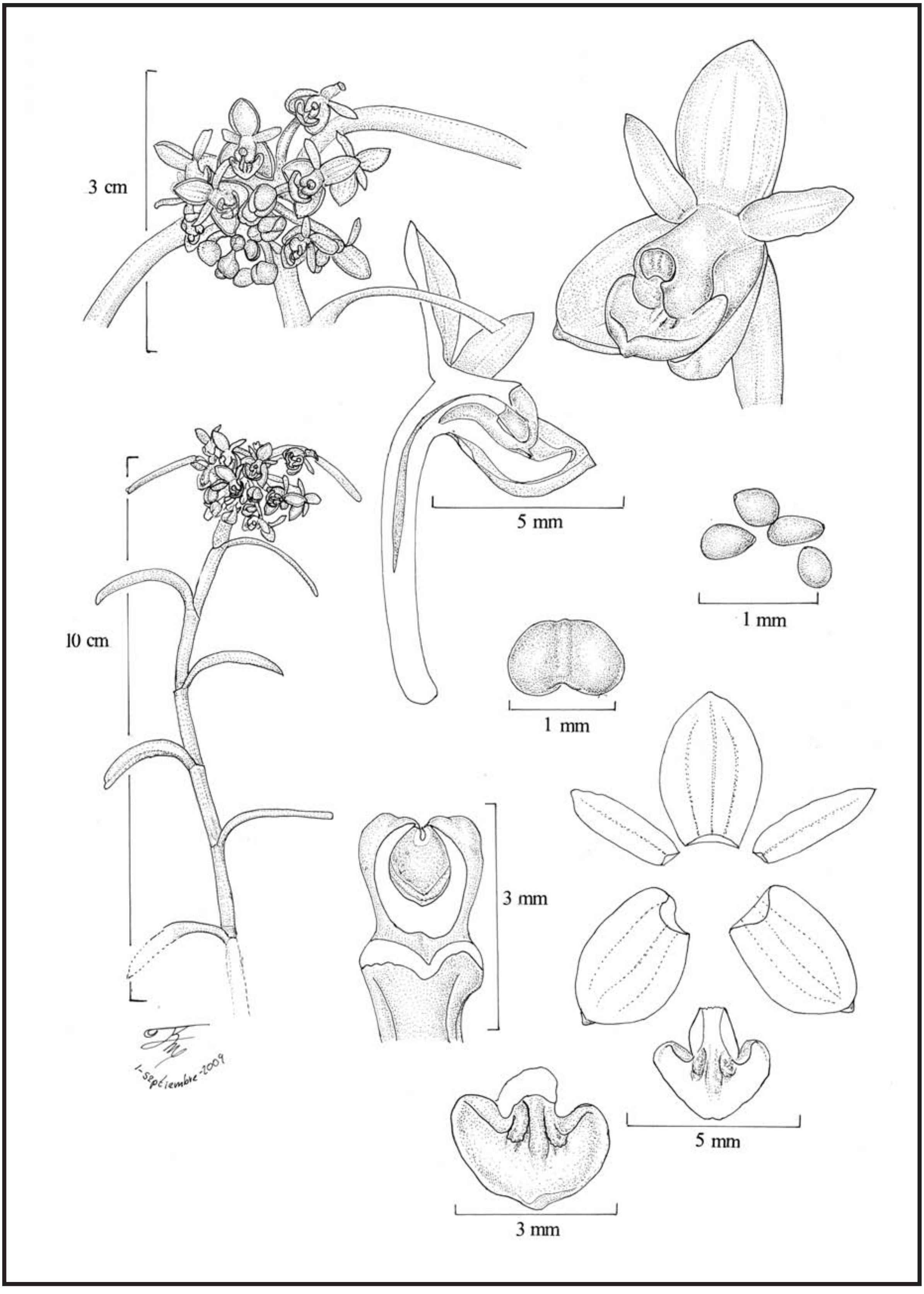


CONSERVATION STATUS: DD. Data deficient. Common throughout the range.

ETYMOLOGY: From the Latin *laevis* smooth, free from unevenness, hairs or roughness.

REFERENCES: Escobar, R., 1991, **Orquídeas Nativas de Colombia** 2: 175. Bentham, G., 1846, **Plantae Hartwegianae**, p. 258. Mansfeld, R., 1929, Figurenatlas zu der Südamerikanischen Kordillerenstaaten von R. Schlechter, **Repert. Spec. Nov. Regni Veg., Beih.** 57: no. 182.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM LATERITIUM Hágsater & Jenny **Plate 1345**

EPIDENDRUM LATERITIUM Hágsater *et* Jenny, *sp. nov.*

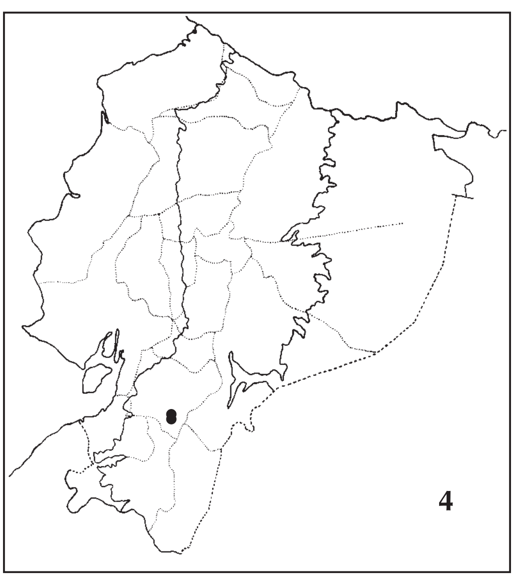
Type: ECUADOR: Azuay: Nudo de Portete, 2600 m, col. 2001, ***Dominique Rigo 1883/01***, cult. Botanische Garten Basel, Switzerland, October 2009. Holotype: RENZ! Clonotypes: dried flowers, 7 August 2009, with illustration based on flowers and digital images of pretype, AMO! (Illustration voucher). RENZ!

Epidendro alfonsopozoi Hágsater & Dodson simile sed floribus brunneo-rubellis et segmentorum floralium apicibus basibusque cum aurantiaco suffusis, labelli base profunda cordata recedens.

Hierba epífita, monopodial, de más de 10 cm de alto. **Raíces** no vistas. **Tallos** originándose de los entrenudos apicales del tallo anterior, tipo caña, teretes, delgados, erectos, rectos; el inicial no visto; los sucesivos, 10 x 0.23-0.3 cm. **Hojas** ca. 8, distribuidas a lo largo del tallo, extendidas, ligeramente arqueadas, alternas, articuladas, subcoriáceas; vaina tubular finamente estriada, teñida de purpúra, 1.1-1.5 x 0.23-0.3 cm; lámina linear lanceolada, ápice redondeado, bilobado, margen entero, extendido, 2-2.3 x 0.23-0.3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, subumbeliforme, arqueada, ca. 1.5 cm de largo; pedúnculo muy corto, terete, delgado, 5 mm de largo; desprovisto de brácteas; raquis oculto en su totalidad por las flores. **Brácteas florales** de cerca de la mitad del largo de el ovario, angostamente triangulares, acuminadas, abrazadoras, 2-5 mm de largo. **Flores** 22, abriendo de manera sucesiva desde la base al ápice del raquis y llegando a estar casi en su totalidad abiertas de manera simultánea, resupinadas, dispuestas en espiral a lo largo del raquis, botones florales verdosos, las flores totalmente desarrolladas de color pardo rojizo con la base y el ápice de los sépalos y los pétalos anaranjados, lustrosos, la columna naranja verdoso en la base y púrpura rojizo hacia el ápice, las quillas del labelo anarajadas; sin datos de fragancia. **Ovario** terete, delgado, no inflado, no ornamentado, teñido de rojizo, 8 mm de largo. **Sépalos** libres, elípticos, ápice subredondeado, carnosos, 3-nervados, margen entero, 4-4.5 x 2.5-3 mm; el **dorsal** extendido, los **laterales** entreabiertos, diminutamente apiculados. **Pétalos** extendidos, libres, oblongos, agudos, 1-nervados, margen diminutamente papiloso, extendido, 4 x 1 mm. **Labelo** unido a la columna, entero, cordiforme, profundamente cordado en la base, algo cóncavo, margen basal conduplicado, diminutamente papiloso, 2.5 x 3.2 mm; ecalloso, con tres quillas carnosas, que se desvanecen antes de la mitad de la lámina. **Columna** corta, recta, gruesa, el ápice con un par de alas redondeadas, no involutas, 2 mm de largo. **Clinandrio** reducido, margen entero. **Antera** reniforme, con una quilla baja en la superficie dorsal, 4-locular. **Polinios** 4, obovoides. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** pequeños, de la mitad del largo de la cavidad estigmática. **Nectario** corto, sin traspasar el perianto, no inflado, liso. **Cápsula** no vista.

Epiphytic, monopodial, short **herb**. **Stems** originating from the apical internodes of the previous stem, cane-like, terete, thin, erect, straight. **Leaves** ca 8, distributed throughout the stem, spreading, slightly arching, alternate, articulate, sub-coriaceous; sheath tubular, minutely striated, tinged purple; blade linear-lanceolate, apex rounded, bilobed, margin entire, spreading. **Inflorescence** apical, flowering only once, racemose, sub-umbelliform, arching; peduncle very short, terete, thin, without bracts; rachis hidden by the flowers. **Floral bracts** about half as long as the ovary, narrowly triangular, acuminate, amplexicaul. **Flowers** 22, opening in succession from the base of the rachis towards the apex, eventually nearly all open simultaneously, resupinate, spirally arranged along the rachis, floral buds greenish at the base, reddish purple towards the apex, when mature reddish brown at the base, and the apices of the sepals and petals orange, lustrous, column greenish orange at the base, reddish purple towards the apex, the keels of the lip orange. **Ovary** terete, thin, not inflated, unornamented, tinged reddish. **Sepals** free, elliptic, apex sub-rounded, 3-veined, margin entire; dorsal sepals spreading, lateral sepals partly spreading, minutely apiculate. **Petals** spreading, free, oblong, acute, 1-veined, margin minutely papillose, spreading. **Lip** united to the column, entire, cordiform, base deeply cordate, somewhat concave, basal margin conduplicate, minutely papillose; ecallose, with 3 fleshy keels that disappear before the middle of the lip. **Column** short, straight, thick, apex with a pair of rounded, non-involute wings. **Clinandrium-hood** reduced, margin entire. **Anther** reniform, with a low dorsal keel, 4-celled. **Pollinia** 4, obovoid. **Rostellum** apical, slit. **Nectary** short, without penetrating the ovary, not inflated, smooth.

OTHER SPECIMENS: None seen.



OTHER RECORDS: Without locality, photo received 26 VIII 2006, *David Banks s.n.*, digital photo, AMO! **ECUADOR: Azuay:** hort. Ecuagenera, *Hirtz 7799*, slide, AMO!

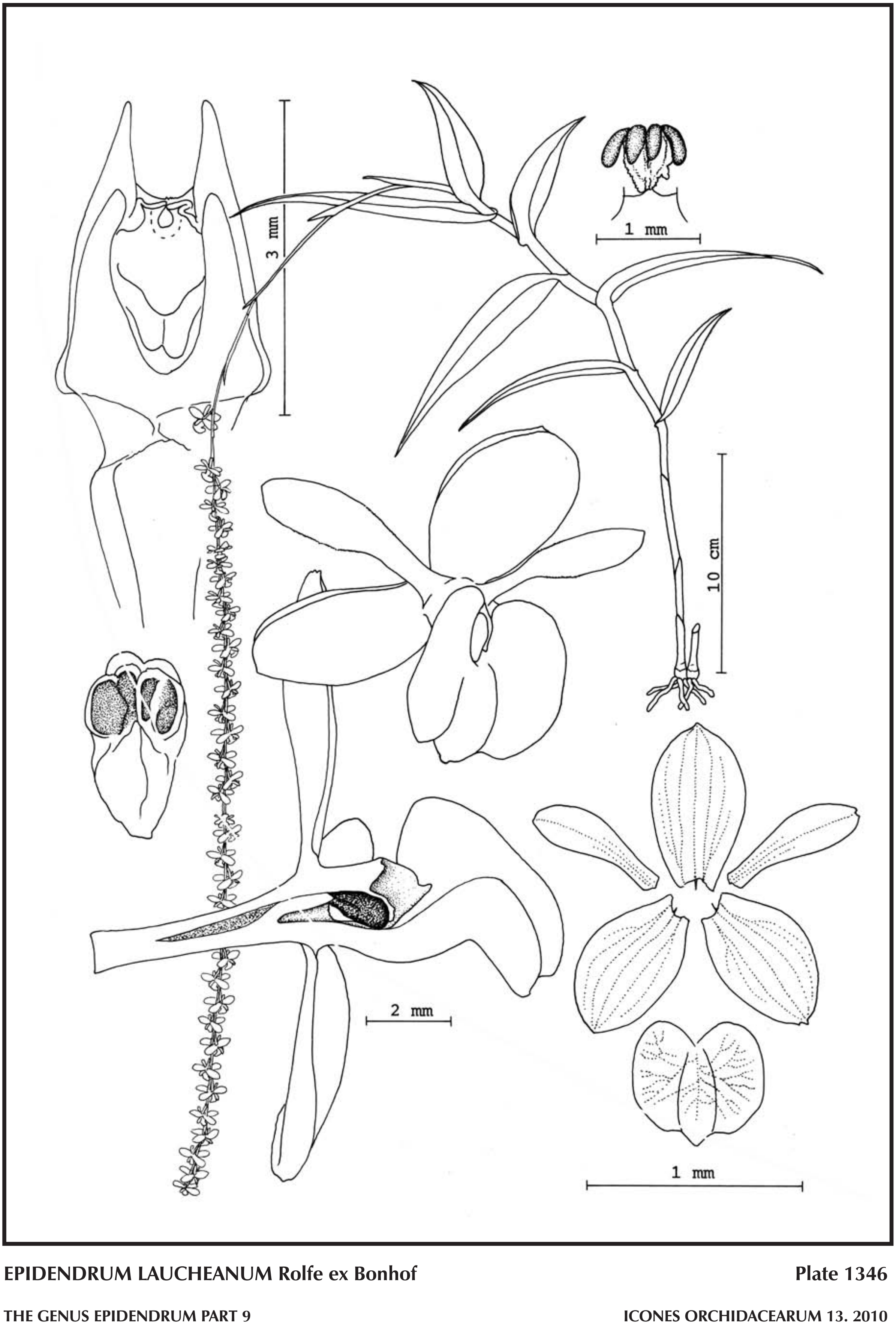
DISTRIBUTION AND ECOLOGY: Known only from southern Ecuador, at 2600 m altitude. Flowering in August.

RECOGNITION: *Epidendrum lateritium* belongs to the Diothonea Group and Subgroup which is characterized by the branching plants, linear lanceolate to oblong, bilobed leaves, racemose, arching-nutant inflorescence, membranaceous flowers (rarely fleshy), the entire to 3-lobed, ecallose lip with the margin erose, without or with 1-10 thin, smooth to erose keels, the column completely to obliquely united to the lip, the anther reniform. The new species is recognized by the small flowers (sepals 4.0-4.5 mm long), lustrous red with the apices and base of the floral segment orange, the lip deeply cordate at the base, and the leaves spreading, slightly arching. *Epidendrum alfonsopozoi* has orange colored flowers, with the apex of the column and the base of the disc of the lip tinged purple, the base of the lip is sub-truncate, and the leaves sub-erect, not arching. *Epidendrum jativae* Dodson has somewhat larger flowers (sepals 6 mm long) green to brown-purple and the lip is 3-lobed.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *lateritius*, dark brick-red, like old red tiles, in reference to the red-brown flowers that characterize this species.

Authors: E. Hágsater & R. Jenny **Illustrator:** R. Jiménez M. **Editors:** E. Hágsater & L. Sánchez S.



EPIDENDRUM LAUCHEANUM Rolfe ex Bonhof **Plate 1346**

EPIDENDRUM LAUCHEANUM Rolfe ex Bonhof, Bull Misc. Inform. Kew 1893: 62. 1893. Gaertenfl. 41: 183. 1892, nomen.

Type: "COLOMBIA: Popayán", flowered with F. Sander & Co., of St. Albans, in November 1889, ***F. Sander s.n.*** Holotype: K-L! [mounted with a specimen received from Mr. F. W. Moore, Glasnevin Botanic Garden, Dublin, in September 1892.] Fragment of holotype, photo, and drawing of a flower, AMES!

Synonyms: *Epidendrum dolichostachyum* Schltr., Repert Spec. Nov. Regni Veg. Beih. 3: 79. 1906. Type: COSTA RICA: Bei La Palma, 1550 m, ***Henri Pittier 10311.*** Holotype B, destroyed. Isotypes: BR! (illustration of flower, AMO!) US! Tracing of drawing published in Mansfeld (1931: t. 49, nr. 194): AMES!

Epidendrum cristobalense Ames, Schedul. Orchid. 4: 38. 1923. Type: COSTA RICA: San Cristobal, 5000-8000 feet, 12 January 1923, ***Charles H. Lankester & Alfredo Sancho 381.*** Holotype: AMES 23728!

Epidendrum urostachyum Schltr. Beih. Bot. Centralbl. 36(3): 409-410. 1918. Type: COSTA RICA: El Tablazo, près San José, 1900 m, September 1913, ***Emel Jiménez 17651.*** Holotype: CR! (fragment of holotype (flower) and tracing of drawing published in Mansfeld (1931: t. 58, nr. 231): AMES!)

Hierba epífita, simpodial, cespitosa, erecta, de 70-90 cm de alto. **Raíces** basales, carnosas, delgadas, 1-1.5 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base y lateralmente aplanados hacia el ápice, rectos, 18-33 x 0.3-0.85 cm; cubiertos en la mitad basal por vainas tubulares no foliares, escariosas y fibrosas con el tiempo, 30-55 mm de largo. **Hojas** 3-8, distribuidas en la mitad apical del tallo, desiguales en tamaño (la basal muy pequeña), erecto-extendidas, articuladas, dísticas, coriáceas; vainas tubulares, finamente estriadas, 10-57 x 5.3-8.5 mm; lámina linear-lanceolada, acuminada, margen entero, algo revoluto, 3.5-21.5 x 0.6-2.2 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, florece una sola vez, muy larga, pluriflora, densa, arqueado nutante, 25-80 cm de largo; pedúnculo lateralmente aplanado, ancipitoso, arqueado, recto a ligeramente sinuoso, 8-32 cm de largo; oculto casi en su totalidad por 1-4 brácteas tubulares, agudas, ancipitosas, de tamaño decreciente hacia el ápice del pedúnculo, 3.2-9 cm de largo; raquis delgado, lateralmente aplanado, recto, 20-45 cm de largo. **Brácteas florales** las basales casi tan largas como el ovario, gradualmente más cortas hacia el ápice del raquis, linear lanceoladas a ovado triangulares, acuminadas a agudas, abrazadoras, 1.3-9 mm de largo. **Flores** 11-80, sucesivas, (aunque llegando a estar casi en su totalidad abiertas de manera simultánea), carnosas, resupinadas, sépalos y pétalos ocráceos tornándose naranja con la edad a raramente a pardo purpúreos, labelo verde manzana; sin fragancia. **Ovario** terete, delgado, ligeramente dilatado justo detrás del perianto, liso, 3-6 mm de largo. **Sépalos** libres, extendidos, elíptico-oblongos, subagudos, 3-nervados, con las nervaduras laterales ramificadas desde la base dando la apariencia de ser 5-nervados, margen entero, extendido, 6-8 x 3-4 mm; los **laterales** diminutamente apiculados. **Pétalos** libres, extendidos, linear oblanceolados, oblicuos, redondeados, 1-nervados, margen diminutamente eroso, extendido, 5-6.6 x 1-2 mm. **Labelo** unido a la columna, entero, subconduplicado, profundamente cordado en la base, reniforme (se rompe al extenderse), ápice redondeado, ligeramente recurvado, margen entero, extendido, 4.5-5 x 6-7 mm; ecalloso; disco con una quilla prominente, muy carnosa, que se desvanece en el ápice de la lámina. **Columna** recta, corta, gruesa, con un par de dientes laterales prominentes, 2-3 mm de largo. **Clinandrio** reducido, margen dentado. **Antera** ovoide, 4-locular. **Polinios** 4, ovoideos, lateralmente aplanados; caudículas suaves y granulosas, mas cortas que los polinios. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando más de la mitad de la cavidad estigmática. **Nectario** apenas penetrando el ovario justo detrás del perianto, no inflado, no ornamentado. **Cápsula** elipsoide; pedicelo 3-6 mm de largo; cuerpo 15-28 x 11-16 mm; cuello apical, 3-6 mm de largo.

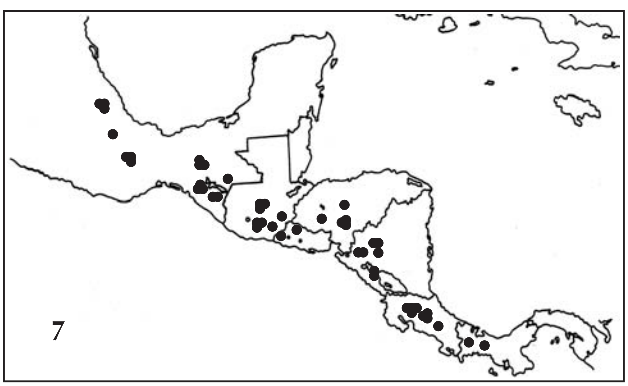
Epiphytic, sympodial, caespitose, erect **herb. Roots** basal, fleshy, thin. **Stems** simple, cane-like, terete near the base, laterally compressed above, straight; the lower half covered by tubular, non-foliaceous, scarious sheaths becoming fibrous with time. **Leaves** 3-8, distributed along the apical half of the stem, unequal in size, the lower one very small, erect-spreading, articulate, distichous, coriaceous; sheaths tubular, minutely striated; blade linear-lanceolate, acuminate, margin entire, somewhat revolute. **Inflorescence** apical, racemose, flowering only once, very long, densely many-flowered, arching-nodding; peduncle laterally compressed, ancipitose, arching, straight to somewhat sinuous, nearly totally hidden by 1-4 tubular, acute, ancipitose bracts of diminishing length; rachis thin, laterally compressed, straight, very long. **Floral bracts** nearly as long as the ovary to much shorter, linear-lanceolate to ovate-triangular, acuminate to acute. **Flowers** 11-80, successive, though most will be open at one time, fleshy, resupinate, sepals and petals ochre turning orange with age to purple-brown, lip apple-green; not fragrant. **Ovary** terete, thin, slightly dilated behind the perianth, smooth. **Sepals** free, spreading, oblong-elliptic, sub-acute, 3-veined, the lateral veins branching so as to appear 5-veined, margin entire, spreading; the lateral sepals minutely apiculate. **Petals** free, spreading, linear-oblanceolate, oblique, rounded, 1-veined, the margin minutely erose, spreading. **Lip** united to the column, entire, sub-conduplicate, deeply base cordate, reniform when spread (breaking when spread), apex rounded, slightly recurved, margin entire, spreading; ecallose, disc with a prominent, very fleshy keel. **Column** straight, short, thick, with a pair of prominent lateral teeth. **Clinandrium-hood** reduced, margin dentate. **Anther** ovoid, 4-celled. **Pollinia** 4, ovoid, laterally compressed, caudicles soft and granulose, shorter than the pollinia. **Rostellum** subapical, slit. **Nectary** barely penetrating the ovary, not inflated, smooth. **Capsule** ellipsoid, with a short pedicel and apical neck.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Widespread from Veracruz, Mexico to western Panama, epiphytic, mainly at 1300-2300 m altitude. Flowering from August to November. No specimen has been registered from Colombia.

RECOGNITION: *Epidendrum laucheanum* belongs to the Carolii Group which is characterized by the caespitose habit, short, unbranched, laterally compressed stems, thick, coriaceous leaves, and the long, arching, nutant, rat-tail-like inflorescence with a long bracts at the base, and the numerous, successive flowers. The species is recognized by the large plants (70-90 cm tall) with linear-lanceolate, acuminate leaves (up to 21.5 cm long), the margin revolute, the long, racemose, rat-tail inflorescence (25-80 cm long), many-flowered (up to 80), the flowers fleshy, ochre to purple-brown, with the lip apple-green, and the column ending in a pair of lateral teeth. *Epidendrum carolii* Schltr. has somewhat smaller plants (13-35 cm tall), with narrowly ovate to ovate-lanceolate leaves, the margin spreading and the apex acute to rounded (2.5-8 cm long), a shorter, racemose inflorescence with up to 23 flowers (16-30 cm long), the flowers copper colored, tinged with purple and the lip yellow, the column ending in a pair of rounded wings. *Epidendrum probiflorum* Schltr. also has shorter plants (to 33 cm tall), oblong-lanceolate to ovate lanceolate, acute leaves (3.4-6 cm long), a generally paniculate, erect inflorescence with up to 60, purple-brown to creamy-peach colored flowers, the lip white and the apex of the column ending in a pair of teeth.

CONSERVATION STATUS: DD. Data deficient. A common species in Costa Rica.

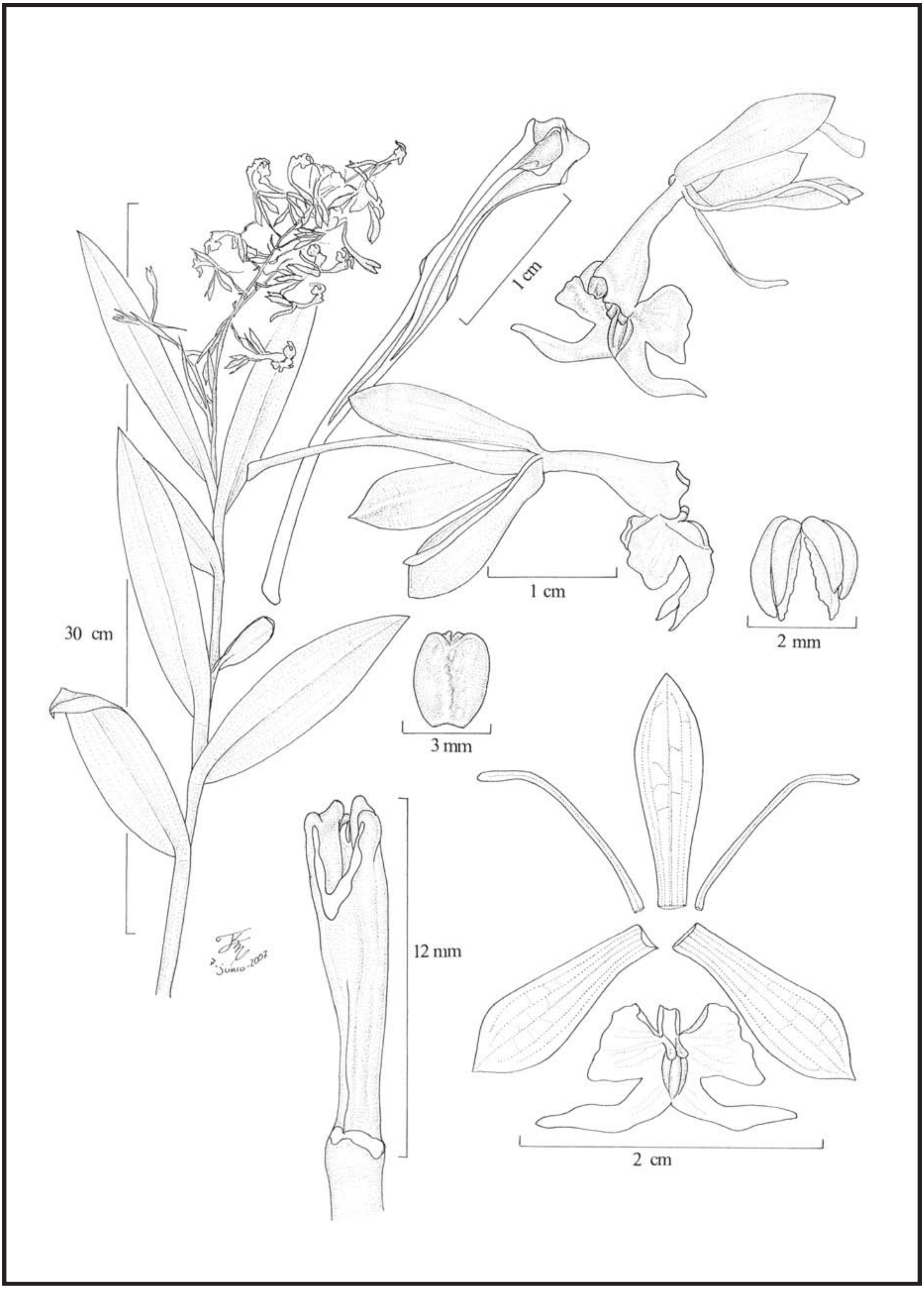


ETYMOLOGY: In honor of Mr. Lauche, botanic director of the Liechtenstein Gardens, Vienna, Austria, at the end of the 19th century.

REFERENCES: Ames, O., F.T., Hubbard, and C. Schweinf., 1936, **The Genus Epidendrum in the United States and Middle America:** p. 114. Ames, O., and D. S. Correll, 1952, **Orchids of Guatemala. Fieldiana Botany:** 26: 339. Atwood, J. T., 1989, **Icon. Pl. Trop.:** 14: pl. 1320. Dodson, C. H., 1982, **Icon. Pl. Trop.** 8: pl. 714, Hágsater, E., 2005, *Epidendrum* in F., Pupulin, **Vanishing Beauty: Native Costa Rican Orchids** 1: 306, San José C.R. Editorial de la Universidad de Costa Rica. Hamer, F., 1974, **Las Orquídeas de El Salvador** I: 268. Hamer, F., 2001, *Orchidaceae* Juss., in W.D. Stevens et al.,(*eds*.), **Flora de Nicaragua** 85(2): 1687, Missouri Botanical Garden Press, St. Louis, Missouri, U.S.A. Mansfeld, R., 1931, **Repert. Spec. Nov. Regni Veg. Beih.** 59(2): t. 49, no. 194.; ibid.: t. 58, no. 231, Williams, L.O., 1956, An ennumeration of the Orchidaceae of Central America, British Honduras and Panama, **Ceiba** 5: 124.

Authors: E. Santiago & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**

Herbario AMO **México, D.F. MÉXICO**



EPIDENDRUM LILACINOIDES Hágsater & E.Santiago Plate 1347

EPIDENDRUM LILACINOIDES Hágsater et E.Santiago, *stat. et nom. nov.*

Basionym: *Epidendrum floribundum* Kunth *var lilacinum* Rchb.f., Linn. 22(6): 840. 1849.

Type: [VENEZUELA:] Mérida, ***Moritz 233****. Holotype: K-L. Isotype: AMES! [There is a second *Moritz 233* at K-L from Caracas which is the holotype of *E. agathosmicum* Rchb.f.]. Non *Epidendrum lilacinum* Linden, *nec E. lilacinum* Galeotti = *Encyclia bractescens* (Lindl.) Hoehne

Hierba epífita, simpodial, cespitosa, de ca. 60 cm de alto. **Raíces** basales. **Tallos** sencillos, tipo caña, teretes, erectos, rectos, 35 x 0.5-0.8 cm. **Hojas** 13, distribuidas a lo largo del tallo, las basales y las apicales de tamaño menor que las intermedias, alternas, articuladas, subcoriáceas, con las nervaduras evidentes; vaina tubular, finamente estriada, 1.3-4.5 cm de largo; lámina elíptica, aguda a cortamente acuminada, margen entero, extendido, 12.5-20 x 2.5-4.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, paniculada, florece una sola vez, pluriflora, subdensa, 21-25 cm de largo; provista de 6-9 racimos, 11-15 cm de largo; cada uno de ellos con una bráctea basal, angostamente triangular, acuminada, 1-6 cm de largo; pedúnculo corto, 5-6 cm de largo; generalmente provisto de hasta 3 brácteas tubulares, agudas, 4-7 cm de largo. **Brácteas florales** mucho más cortas que el ovario, angostamente triangulares, agudas, abrazadoras, progresivamente más pequeñas hacia el ápice del raquis, 3-12 mm de largo. **Flores** ca. 100, simultáneas, resupinadas, de color púrpura con el labelo blanco, tornándose amarillento con el tiempo; aromáticas. **Ovario** terete, delgado, no inflado, no ornamentado, 12-35 mm de largo. **Sépalos** reflexos, libres, angostamente oblanceolado espatulados, unguiculados, agudos, 5-nervados, margen entero, extendido, 11-14 x 2.8-3 mm. **Pétalos** reflexos, libres, linear filiformes, redondeados, 1-nervados, margen entero, extendido, 10-13 x 1.0 mm. **Labelo** unido a la columna, trilobado, cordado en la base, más ancho entre el lóbulo medio que entre los laterales, margen subentero, 5-6 x 14-18 mm; bicalloso, los callos pequeños; disco provisto de 3 carinas delgadas, agudas; los lóbulos laterales oblicuamente dolabriformes, 5 x 4 mm; lóbulo medio profundamente bilobado y fuertemente divaricado, cada lóbulo linear oblongo, obtuso, 8 x 1 mm. **Columna** recta, delgada, algo dilatada hacia el ápice, 10 mm de largo. **Clinandrio** reducido, margen entero. **Antera** 4-locular, ovoide con el ápice truncado. **Polinios** 4, tipo ala de pájaro, el par interior algo más corto. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** pequeños, ocupando 1/3 del largo de la cavidad estigmática. **Nectario** penetrando ¼ del ovario, no inflado, no ornamentado. **Cápsula** no vista.

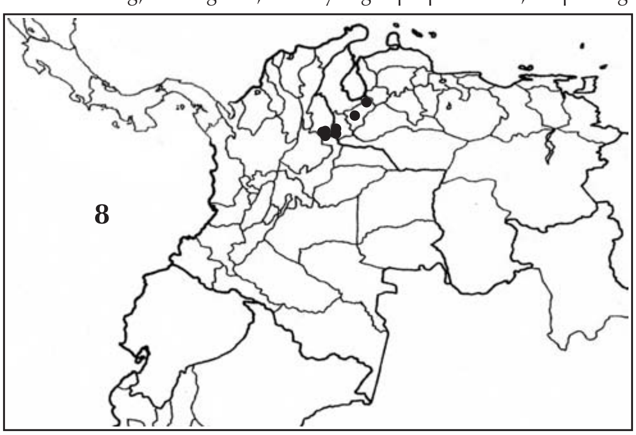
Epiphyte, sympodial, caespitose **herb**. **Roots** basal. **Stems** simple, cane-like, terete, erect, straight. **Leaves** 13, distributed throughout the stem, alternate, articulate, sub-coriaceous, with evident veins, the basal and apical leaves smaller than the middle ones; sheaths striated; blade elliptic, acute to short-acuminate, margin entire, spreading. **Spathaceous bract** absent. **Inflorescence** apical, paniculate, flowering only once, many-flowered, somewhat dense, formed by 6-9 racemes, each with a basal, narrowly triangular, acuminate bract; peduncle with 3 tubular, acute bracts. **Floral bracts** much shorter than the ovary, narrowly triangular, acute, amplexicaul, progressively smaller towards the apex of the rachis. **Flowers** ca. 100, simultaneous, resupinate, purple with the lip white, turning yellowish with age; fragrant. **Ovary** terete, thin, not inflated, smooth. **Sepals** reflexed, free, narrowly oblanceolate-spatulate, unguiculate, acute, 5-veined, margin entire, spreading. **Petals** reflexed, free, linear-filiform, rounded, 1-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base cordate, wider between the mid-lobe than between the lateral lobes, margin sub-entire; bicallose, the calli small; disc provided with 3 narrow, acute keels; the lateral lobes obliquely dolabriform; the mid-lobe deeply bilobed and strongly divaricate, each lobe linear-oblong, obtuse. **Column** straight, thin, somewhat dilated towards the apex. **Clinandrium-hood** reduced, margin entire. **Anther** 4-celled, ovoid, apex truncate. **Pollinia** 4, "bird-wing" type, the inner pair somewhat shorter. **Rostellum** apical, slit. **Nectary** penetrating ¼ of the ovary, not inflated, smooth.

OTHER SPECIMENS: COLOMBIA: Norte de Santander: Pamplona, La Baja, 7000-8000 ft, *Funk 1174,* BR! P! Pamplona, 7600 ft, I 1847, *Funk 1448*, P! Loso, N of Toledo, 2200-2400 m, 6 III 1927, *Killip 20452,* AMES! Pamplona, La Baja, 8000 ft, *Linden 1174*, W-R! Pamplona, 2600 m, *Schlim 148*, W-R! **VENEZUELA:** hautes Andes de Trujillo et de Mérida, *Linden 516*, BR! P! W-R! **Mérida-Trujillo:** Hautes Andes de Truxillo & Mérida, 4000-14500 ft, *Linden s.n.*, G! (Illustration voucher). P x2! **Mérida:** between Mesa del Trapiche and El Molino, 2530-2590 m, 14 V 1944, *Steyermark 56504*, AMES! **Táchira:** La Revancha-La Fundación, Río Quinimari, 2100 m, 14 V 1957, *Renz 6972*, RENZ! Quebrada Agua Azul, S of El Reposo, 2150-2300 m, 22 VI 1979, *Steyermark 118315*, MEXU!

OTHER RECORDS: VENEZUELA: Táchira: Junín, 2477 m, *García Esquivel 67*, color photo published in C. Fernández (2003) p. 81 as *Epidendrum ionodesme* Schltr.

DISTRIBUTION AND ECOLOGY: Found on both sides of the border, in the Andes of Colombia and Venezuela, at 2200-2600 m. Flowering from January to May.

RECOGNITION: *Epidendrum lilacinoides* belongs to the Pseudepidendrum Group is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, apical inflorescence, lacking a spathaceous bract, the petals filiform and the lip usually 3-lobed, with 3 parallel fleshy keels, the apical lobe often bifurcate, and the pollinia "bird-wing" type and Porphyreum Subgroup which has flowers colored reddish orange, deep purple or lilac-pink, the calli generally prominent, sometimes horn-like. The species is recognized by the purple flowers with a white lip, becoming yellowish with age, sepals oblanceolate-spatulate, 11-14 mm long, the lip with a pair of minute, globose calli, wider between the mid-lobe than the lateral lobes which are obliquely dolabriform. *Epidendrum floribundum* Kunth has somewhat smaller flowers, sepals 10.5 mm long, green, petals and lip white, the basal lobes of the lip are semi-orbicular to sub-quadrate. *Epidendrum angaritae* Hágsater has greenish brown sepals the lip white spotted with purple, sepals are 15-17 mm long, the basal lobes of the lip dolabriform with the margin sinuous. *Epidendrum macroceras* Schltr. has smaller flowers, sepals 9 mm long, the apical lobes of the lip strongly falcate, and it is apparently endemic to the Sierra de Santa Marta, Colombia. *Epidendrum paniculovenezolanum* Hágsater & E.Santiago has much taller plants (ca. 1.8 m), the leaves strongly tinged purple on the underside, sepals 13-14 mm long, ochre-green, dorsally tinged purple-brown, the petals green, and the lip white.



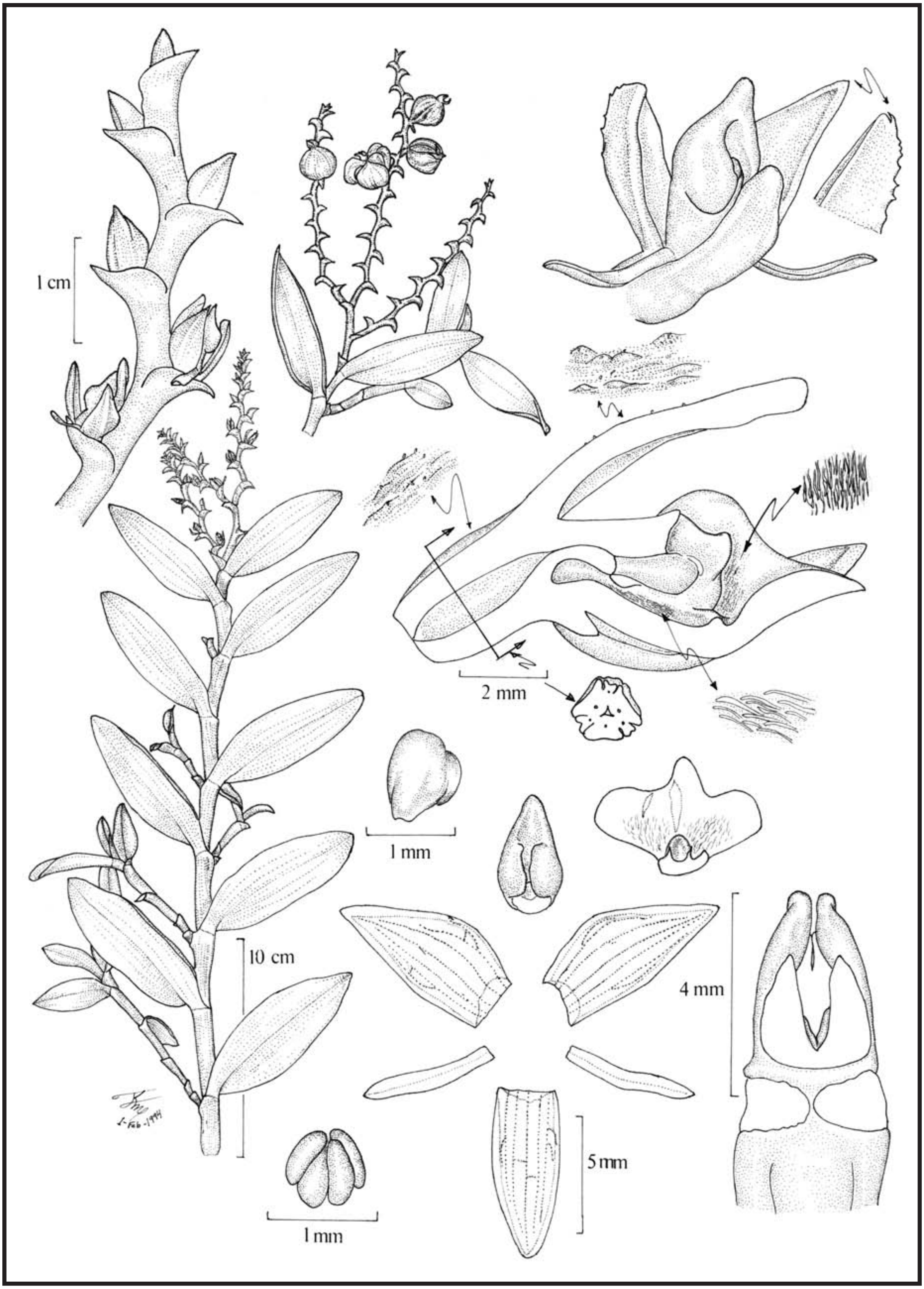
***NOTE:** As was common during the 19th century, collectors would use the same number for various collections of what appeared to them as the same species, sometimes collected together, but often at different times and different places; that is the case of *Moritz 233*. The plant from Mérida has lilac flowers, the disc of the lip white, while the same number, but collected in Caracas and deposited at K-L, has white flowers and a distinctly different lip, it is the holotype of *Epidendrum agathosmicum* Rchb.f. Garay confused the Caracas specimen at K-L, and in his personal notes (xerox AMO) there is a reduced xerox of the K-L specimen marked as *Epidendrum floribundum* var. *lilacinum* Rchb.f.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin, *lilacinus*, in reference to the color lilac, pale dull violet mixed with white.

REFERENCE: Férnandez, C., 2003, Orquídeas nativas del Táchira, San Cristóbal, Táchira, Venezuela. 246 pp.

Authors: E. Hágsater & E. Santiago **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM LINDAE Hágsater & Dodson **Plate 1348**

EPIDENDRUM LINDAE Hágsater & Dodson, Icon. Orchid. (Mexico) 3: pl. 345. 1999.
Type: COLOMBIA: Valle del Cauca: Camino Cali-Anchicayá, Queremal, estación micronodas Tokio, 1900 m, 25 abril 1983, ***Eric Hágsater, Robert L. Dressler & James P. Folsom 7337.*** Holotype: AMO! (Illustration voucher).

Hierba terrestre, monopodial, ramificada, de 60-120 cm de alto. **Raíces** basales, tanto del tallo principal como de algunas ramificaciones, carnosas, blancas, gruesas, 1.5-4 mm de grosor. **Tallos** tipo caña, ramificados, teretes, erectos, el principal >35 x 0.6-0.8 cm; las ramificaciones 8-14 x 0.2-0.5 cm. **Hojas** numerosas a lo largo del tallo principal, más grandes que las de las ramificaciones, articuladas, alternas; 3-4 en las ramificaciones, desiguales en tamaño (la basal más pequeña); vaina tubular, finamente estriada y rugosa, 1-4 cm de largo; lámina oblongo-elíptica, ápice redondeado, diminutamente apiculado, margen apical crenulado; las del tallo principal, 7-10.5 x 2.2-3.0 cm, las de las ramas 3-8 x 1.0-2.2 cm. **Bráctea espatacea** ausente. **Inflorescencia** apical, florece una sola vez, paniculada a racemosa, erecta, dística, pauciflora, laxa, 6-15 cm de largo; cuando paniculada con una bráctea semejante a las florales en la base de cada racimo; anchamente triangular, aguda, 8-13 mm de largo; pedúnculo corto, 0.7-1.5 cm de largo; provisto de una bráctea basal, semejante a las florales, 6 mm de largo; raquis sinuoso, triquetro, papiloso, 4-8 cm de largo. **Brácteas florales** prominentes, mucho más largas que el ovario, ovado triangulares, agudas, abrazadoras, dispuestas en ángulo recto con respecto al raquis y algo recurvadas, coriáceas, rígidas, más largas que el ovario, en ángulo recto con el raquis, algo recurvadas, 4-10 mm de largo. **Flores** 10-24, carnosas, no resupinadas, sucesivas (aunque 3 a 11 abiertas de manera simultánea), sépalos, pétalos y mitad basal de la columna de color verde, labelo y mitad apical de la columna blancos; sin datos de fragancia. **Ovario** corto, grueso, triquetro, ornamentado con 6 quillas longitudinales prominentes, aladas, diminutamente y escasamente papilosas, 2-3 mm de largo. **Sépalos** entreabiertos, libres, carnosos, cóncavos, 5-nervados, escasamente ornamentados en la superficie dorsal con pequeñas verrugas, margen entero; el **dorsal** oblongo-lanceolado, obtuso, 6 x 2-3 mm; los **laterales** ovados, agudos, oblicuos, con una quilla dorsal baja, 7 x 3-4 mm. **Pétalos** reflexos, lineares, obtusos, carnosos, 1-nervados, 5 x 0.8-1 mm. **Labelo** unido a la columna, trilobado, muy carnoso, cuneado en la base, densamente pubescente* en el disco y sobre el callo, margen entero, 4-5 x 7-8 mm; unicalloso, el callo formando una plataforma carnosa y bisulcada; lóbulos laterales subcuadrados, en posición natural abrazando el ápice de la columna y cubriéndolo en su totalidad, al extenderse se rompen en la unión con el lóbulo medio, 4 x 2 mm; lóbulo medio triangular, obtuso, 2 x 2 mm. **Columna** corta, recta, gruesa, con un diente triangular y oblicuo a cada lado en el ápice de la columna, 4 mm de largo. **Clinandrio** reducido, margen entero. **Antera** ovoide, con el ápice truncado, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas no vistas. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** de 1/3 del largo de la cavidad estigmática. **Nectario** poco profundo, apenas penetrando a la altura del perianto, pubescente frente a la cavidad estigma, la pubescencia reclinada y dirigida hacia el interior del nectario. **Cápsula** globosa, 15 mm de diámetro, persistente durante la floración del año siguiente.

Terrestrial, monopodial, branching, tall **herb**. **Roots** basal, from the base of the main stem and some branches, fleshy, white, thick. **Stems** cane-like, branching, terete, erect, the main stem much taller and thicker than the branches. **Leaves** numerous throughout the main stem, larger than those of the branches, articulate, alternate; 3-4 per branch, unequal in size (the basal leaf smaller); sheath tubular, minutely striated and rugose; blade oblong-elliptic, apex rounded, minutely apiculate, apical margin crenulate. **Inflorescence** apical, flowering only once, paniculate to racemose, erect, distichous, lax, few-flowered, when paniculate with a bracts at the base of each raceme similar to the floral bracts; peduncle short, provided with a basal bract; rachis sinuous, triquetrous, papillose. **Floral bracts** prominent, much longer than the ovary, at a right angle to the rachis, somewhat recurved. **Flowers** 10-24, fleshy, non-resupinate, successive, (though 3-11 may be open simultaneously), sepals, petals and basal half of the column green, lip and apical half of the column white. **Ovary** short, thick, triquetrous, ornamented with 6 prominent, longitudinal, winged keels, minutely and scarcely papillose. **Sepals** free, fleshy, concave, 5-veined, the dorsal surface scarcely ornamented with small warts, margin entire; dorsal sepals partly spreading, oblong-lanceolate, obtuse; lateral sepals partly spreading, ovate, acute, oblique, with a low dorsal keel. **Petals** reflexed, linear, obtuse, fleshy, 1-veined. **Lip** united to the column, 3-lobed, very fleshy, base cuneate, disc densely pubescent* as well as the callus, margin entire; single keeled, the keel forming a fleshy, bisulcate platform; lateral lobes sub-quadrate, embracing the column and totally covering it in natural position, when spread tearing at the union with the mid-lobe; mid-lobe triangular, obtuse. **Column** short, straight, thick, with a triangular, oblique tooth on each side of the apex of the column. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, apex truncate, 4-celled. **Pollinia** 4, obovoid, laterally compressed. **Rostellum** sub-apical, slit. **Nectary** shallow, just penetrating as far as the perianth, pubescent in front of the stigmatic cavity, the pubescent reclining and directed inwards. **Capsule** globose.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Ranging along the upper Pacific slope of the Cordillera Occidental of Colombia and northern Ecuador, and crossing over to the eastern side of the Andes at around the border between Colombia and Ecuador; growing terrestrial at 1600-2840 [3400] m altitude. Flowering from April to November, January.

RECOGNITION: *Epidendrum lindae* belongs to the Aquaticum Group which is characterized by the monopodial, branching habit, the distichous, erect inflorescence, with fleshy flowers, and the disc of the lip and/or nectary often pillose. The species is recognized by the large plants (to 1.2 m tall) with branching stems, a racemose or paniculate inflorescence, small flowers (sepals 6-7 mm long), green with the lip white, the ovary with 3 pairs of winged keels, 3-lobed lip, the disc densely pubescent. *Epidendrum carnosiflorum* C.Schweinf. has narrower leaves (8 mm wide), a simple inflorescence, and larger flowers (sepals 10-11 mm long). *Epidendrum rugulosum* Schltr. has larger flowers, sepals 11 mm long, the lip bicallose, the lateral lobes of the lip embracing the column without covering the apex, the mid-lobe of the lip is triangular-lanceolate.

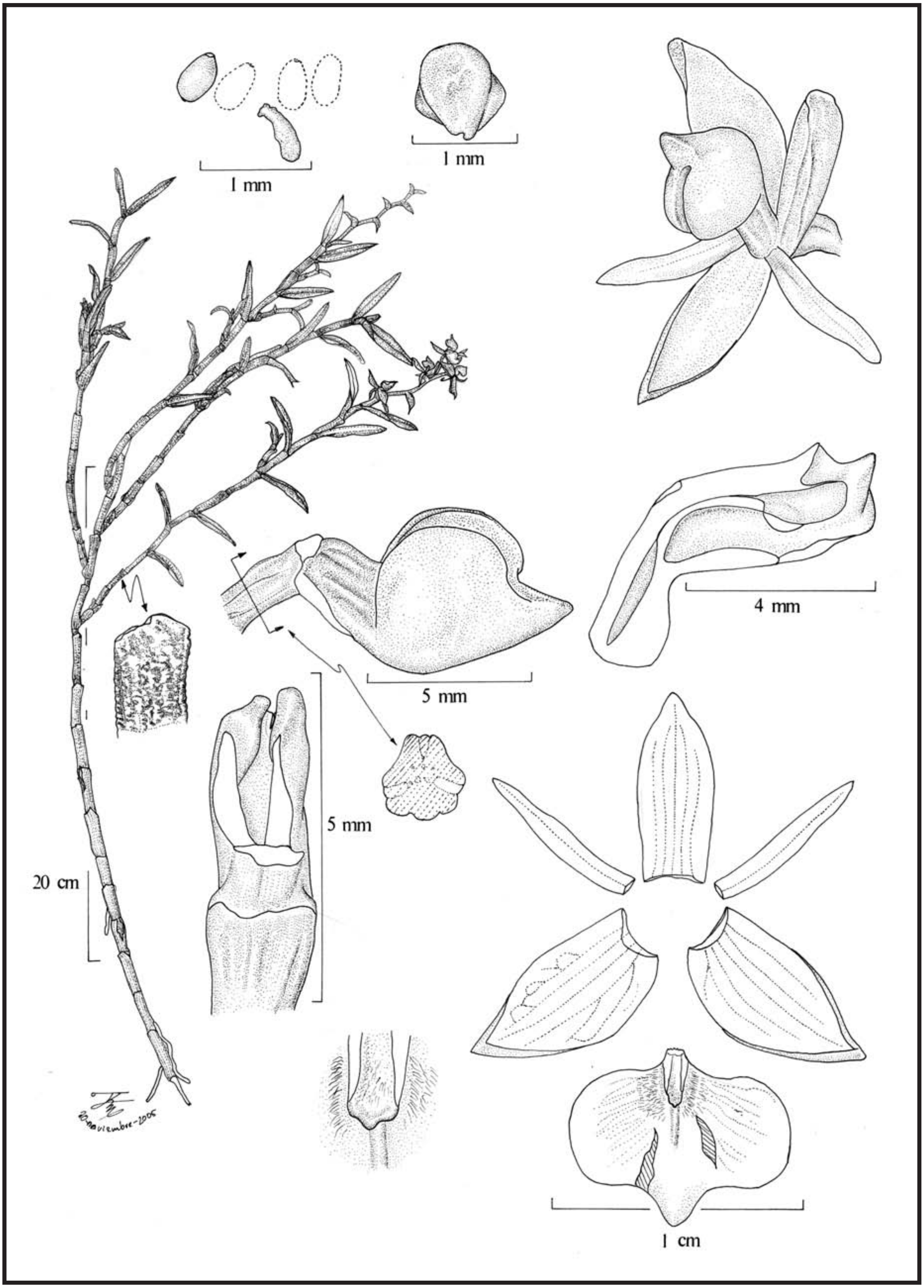


***NOTE:** In the original publication of this species the lip was described and illustrated as glabrous. We are in debt to Ramiro Medina for sending us a series of images which clearly show the pubescent lip. When working with wet flowers or flowers which have been conserved in alcohol, the pubescence is not visible as it is obvious with fresh material, or once the surface liquid dries up. The original illustration prepared from a pressed specimen, which is here modified to show the pubescence and the keeled ovary. The description has also been corrected and amplified, as are the number of specimens cited, and the known range of the species.

CONSERVATION STATUS: DD. Data deficient. Apparently widespread.

ETYMOLOGY: In honor of Linda K. Albert de Escobar (1940-1993), renowned for her work and modern understanding of the passifloras. She spent many years in Colombia, where she eventually became herbarium director at HUA, the herbarium of the Universidad de Antioquia in Medellín. She collaborated in several floristic and ecological surveys and collected almost 10,000 numbers of plants, including this species.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM LINDAMAZONICUM Hágsater & G.Calatayud **Plate 1349**

EPIDENDRUM LINDAMAZONICUM Hágsater *et* G.Calatayud*, sp. nov.*

Type: PERU: Amazonas: Chachapoyas: Road from Chachapoyas to Molinobamba, 6°12'26"S 77°42'32.5"W, 2200 m, 15 May 2001*,* ***T. Henning & C. Schneider 232.*** Holotype: USM 187379! (Illustration voucher). Isotype: HUT 41453! (digital image, AMO!)

Epidendro lindae Hágsater & Dodson simile sed habitu subtiliore, foliis minoribus angustioribusque et minus numerosis, floribus simultaneis, petalis patentibus differens.

Hierba terrestre, monopodial, ramificada, de 60-120 cm de alto. **Raíces** de los entrenudos basales y raramente en algunas ramificaciones, escasas, delgadas, carnosas, blancas, 0.7-1.0 mm de grosor. **Tallos** erectos, ramificados hacia el ápice cuando maduros, tipo caña, teretes, ligeramente flexuosos, el principal de más de [20]32 x 0.32 cm, las ramas más cortas, 7-15 x 0.20-0.30 cm. **Hojas** numerosas en el tallo principal, las basales generalmente caedizas, 6-11 en las ramas, distribuidas a todo lo largo de los tallos; alternas, dísticas, coriáceas, rugosas en la superficie dorsal; vaina tubular, estriada, muy rugosa, 0.7-1.6 x 0.20-0.30 cm; lámina angostamente lanceolado elíptica, ápice agudo, aristado, con una quilla dorsal prominente, margen ligeramente ondulado, 1.5-2.8[3.5] x 0.4-0.5[0.7] cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, dística, erecta, 3.3-4.8 cm de largo; pedúnculo muy corto, terete, delgado, 7-15 mm de largo, ocasionalmente con una bráctea más parecida a las hojas que a las brácteas florales; raquis terete, sinuoso, 2.5-4.2 cm de largo. **Brácteas florales** más largas a más cortas que el ovario, las apicales gradualmente más cortas, triangulares, agudas, margen entero, algo retrorsas, abrazadoras, 3-7 mm de largo. **Flores** 3-5, no resupinadas, el labelo siempre hacia el raquis, simultáneas, color amarillo verdoso y color crema, sin datos de fragancia. **Ovario** subterete, los carpelos superiores cóncavos, el ventral convexo y bisulcado, liso, 3 mm de largo. **Sépalos** libres, carnosos, 5-nervados, margen entero y ligeramente involuto; el **dorsal** extendido, oblongo, subagudo, 8 x 3 mm; los **laterales** entreabiertos, ovados, oblicuos, agudos, 8 x 4 mm. **Pétalos** libres, extendidos, linear acuminados, carnosos, 1-nervados, margen entero, extendido, 5.7 x 0.4-1 mm. **Labelo** unido a la columna, formando un saco profundo y cubriendo totalmente la columna sin abrazarla; trilobado, carnoso, margen entero; con un callo laminar, el ápice tridentado, base del labelo y centro del callo pubescente; 6 x 9 mm; lóbulos laterales subcuadrados, con las esquinas redondeadas, lóbulo medio más pequeño, triangular. **Columna** recta, gruesa, doblada hacia abajo unos 45° con respecto del ovario, con un par de dientes triangulares en el ápice, 4 mm de largo. **Clinandrio** reducido, margen entero. **Antera** ovoidea, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, de un tercio del largo de la cavidad estigmática. **Nectario** sin penetrar el perianto, pubescente frente a la cavidad estigmática. **Cápsula** elipsoide, sésil, sin cuello apical, con el perianto persistente.

Terrestrial, monopodial, branching, **herb**. **Roots** fleshy, thin, basal. **Stem** erect, branching towards the apex of the mature stem, cane-like, terete, somewhat flexuous, the branches shorter than the main stem. **Leaves** numerous on the main stem, 6-11 on the branches, distributed throughout; sheath tubular, striated and very rugose; blade narrowly lanceolate-elliptic, apex subacute, aristate, with a prominent dorsal keel, margin somewhat undulate. **Inflorescence** apical, flowering only once, racemose, distichous, erect, rachis terete, sinuose. **Floral bracts** longer to progressively shorter than the ovary, triangular, acute, margin entire, somewhat retrorse. **Flowers** 3-5, non-resupinate, the lip always oriented towards the rachis, simultaneous, greenish yellow and cream-colored. **Ovary** short, sub-terete, the upper carpels concave, ventrally convex and bisulcate, smooth. **Sepals** free, fleshy, 5-veined, margin entire and slightly involute; the **dorsal** sepals, spreading, oblong, sub-acute; the **lateral sepals** partly spreading, ovate, oblique, acute. **Petals** free, spreading, linear-acuminate, fleshy, 1-veined, margin entire, spreading. **Lip** united to the column, forming a deep sac in front of the column and hiding it completely without embracing it; 3-lobed, fleshy, margin entire; callus laminar, the apex tridentate, base of the lip and center of the callus pubescent; lateral lobes sub-quadrate, the corners rounded, mid-lobe, smaller, triangular. **Column** straight, thick, bent down at 45° with respect to the ovary, with a pair of triangular teeth at the apex. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, 4-celled. **Pollinia** 4, obovoid, laterally compressed. **Rostellum** apical, slit. **Nectary** short, without penetrating the perianth, pubescent in front of the stigmatic cavity. **Capsule** ellipsoid, sessile, without any apical neck, perianth persistent.

OTHER SPECIMENS: PERU: Cajamarca: Prov. San Ignacio, Dtto. San Huarango: Nuevo Mundo, 2200 m, 13 III 2000, *Calatayud 457*, CUZ, digital image AMO! Ibid. sketch of flower, xerox AMO! [cited as *E. lindae* Hágsater et Dodson in Calatayud, 2003.]

DISTRIBUTION AND ECOLOGY: Know only from the basin of the Marañón River in northern Peru, in the provinces of Cajamarca and Amazonas, at 2200 m altitude. Flowering March to May.

RECOGNITION: *Epidendrum lindamazonicum* belongs to the Macrostachyum Group, Aquaticum Subgroup characterized by the branching habit, distichous inflorescence, fleshy flowers and pubescent nectaries. The new species is recognized by the short plants, small, narrow, lanceolate-elliptic leaves, the erect, few-flowered, racemose inflorescence, sinuose, rachis, and the 3-lobed lip, large sub-quadrate, lateral lobes, the corners rounded, and the mid-lobe small and triangular, the column bent down at the base at about 45°; the callus and surrounding area is prominently pillose. It is very similar to *E. lindae* Hágsater & Dodson which has larger, wider leaves, a branching inflorescence, linear petals and a triquetrous ovary, the lip is only slightly cuneate but 3-lobed, with the lateral lobes sub-quadrate. *Epidendrum stenocalymmum* Hágsater & G.Calatayud is recognized by the small, ovate leaves, simple, erect raceme, entire, oblanceolate, unguiculate petals and the cuneate lip forming a deep sac in front of the column, so that the column is not visible. *Epidendrum campylorhachis* Hágsater has a 3-lobed lip with the base cuneate, narrowly oblanceolate petals and an oblique, deeply triquetrous ovary, in addition, the rachis segments are prominently incurved below each bract. The new species has been confused with *Epidendrum alsum* Ridley ex Thurn, a Venezuelan species with larger habit and leaves, a paniculate inflorescence and somewhat 3-lobed lip, the basal lobes broadly rounded, the petals elliptic. *Epidendrum bractiacuminatum* Hágsater & Dodson also has a distichous inflorescence, but is much larger overall, leaves 13-18 cm long, floral bracts 15-45 mm long, sepals12-17 mm long, and the lip is cordiform.



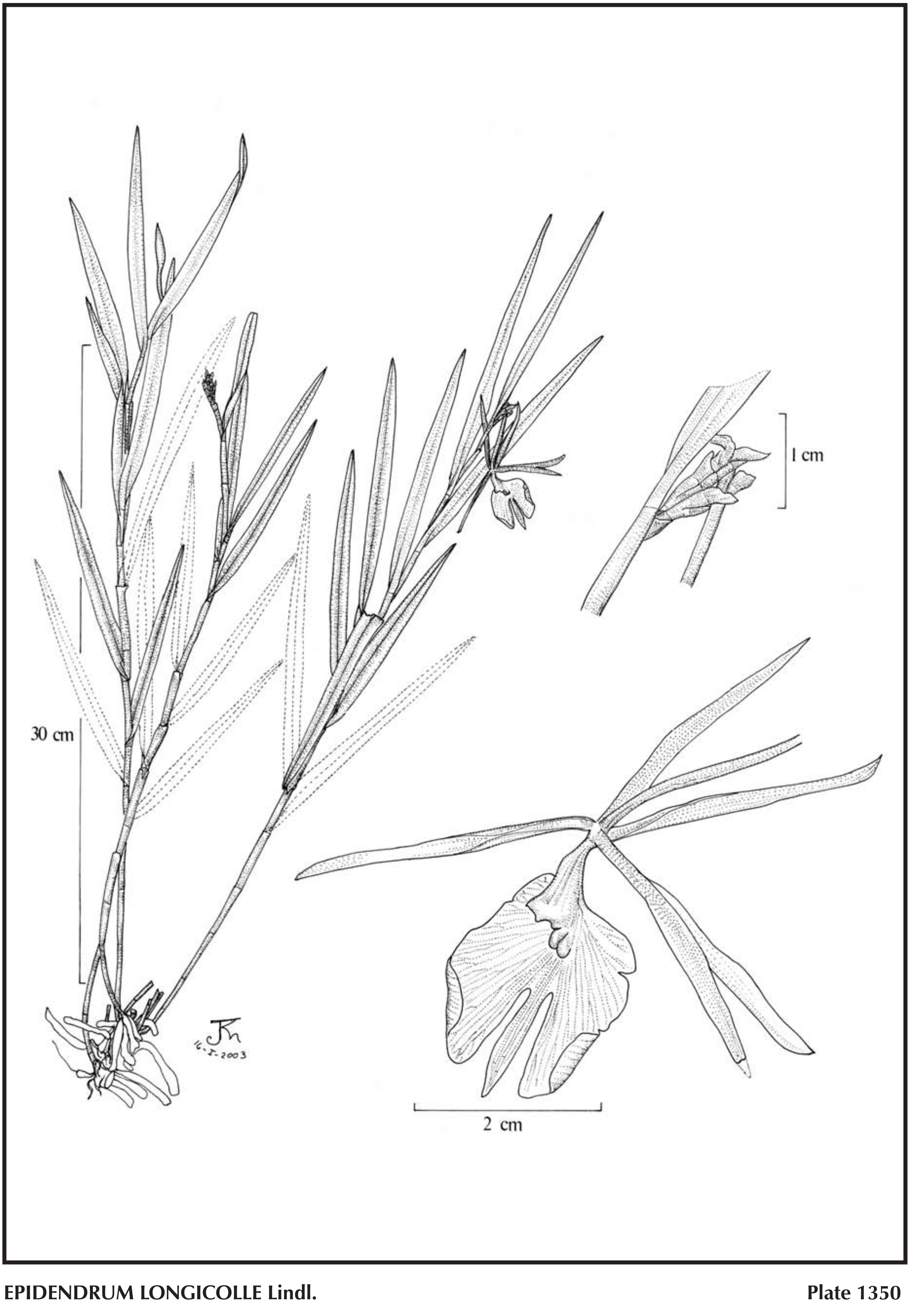
CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to the similarity between this species and *Epidendrum lindae* Hágsater, a species found along the Pacific slope of the Andes in southern Colombia and northern Ecuador, and the fact that the new species is found on the Amazon slope of the Andes, along the basin of the Marañón River.

NOTE: The original illustration and description of *Epidendrum lindae* does not show nor mention that the lip is copiously pillose surrounding and on the callus. A close revision of the type has confirmed that the disc of the lip is pillose, a feature which is often not clearly visible from a flower that is wet after having been boiled or conserved in alcohol. A new update description and illustration of *E. lindae* is provided in this volume.

REFERENCES: Calatayud, G., 2003. **Taxonomía y diversidad de la familia Orchidaceae en 4 localidades de la provincia de San Ignacio**; B. Sc. thesis, deposited in library of the Universidad de San Antonio Abad del Cusco, Perú. Calatayud, G., 2005. Diversidad de la familia Orchidaceae en los bosques montanos de San Ignacio (Cajamarca, Perú). **Rev. Peru. Biol.** 12(2): 309-316.

Authors: E. Hágsater & G. Calatayud **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM LONGICOLLE Lindl. **Plate 1350**

EPIDENDRUM LONGICOLLE Lindl., Bot. Reg. 24: Misc. p. 34. n. 49. 1838.

Type: GUYANA: It was obtained by Messrs. Loddiges from Demerara. Holotype: K-L!

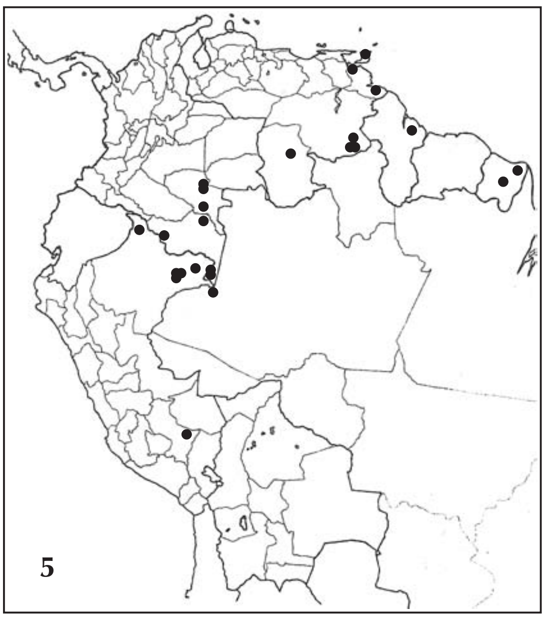
Hierba epífita o litófita, simpodial, cespitosa, 17-40 cm de alto incluyendo la inflorescencia. **Raíces** basales, carnosa, 1.0-2.5 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base, lateralmente comprimidos hacia el ápice, rectos, 8-34.5 x 0.13-0.24 cm. **Hojas** 5-12, distribuidas en las dos terceras partes del tallo; vaina foliar lateralmente comprimida, 1.2-1.8 cm de largo; lámina linear lanceolada, acuminada, mucronada, coriácea, ligeramente carinada, 10:1 a 20:1, 5-15 x 0.4-0.8 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, con el tiempo produciendo nuevos racimos y entonces pluriracemosa, produce una flor a la vez por racimo. **Bráctea floral** mucho más corta que el ovario, abrazadora, triangular, aguda a acuminada, 3.0-4.0 mm de largo. **Ovario** terete, ligeramente inflado, no ornamentado, 30-40 x 0.13-0.21 cm. **Flores** 1-5 por racimo, cleistógamas, sucesivas, producidas una a la vez, resupinadas, flores blancas a crema verde, fragancia no registrada. **Sépalos** extendidos, linear lanceolados, acuminados, 9 nervados con dos nervaduras secundarias dando la apariencia de ser 11-nervados, [28-]30-42 x 4.2-4.5 mm; los **laterales** falcados, oblicuos. **Pétalos** extendidos, linear lanceolados, acuminados, 5-nervados, con venas secundarias dando la apariencia de ser 7-nervados, margen entero, extendido, [28-]30-38 x 2.0-2.5 mm. **Labelo** unido a la columna, trilobado, 22-25 x 7-9 mm; bicalloso, callos laminares, prominentes; lóbulos laterales adnados al lóbulo medio en 1/3 a 1/2 de su longitud, semi-ovados, obtusos a agudos, margen entero, 19-21 x 5-8 mm; lóbulo medio linear a linear lanceolado, agudo, margen entero, 12-17 x 2-3 mm. **Columna** ligeramente arqueada, dilatada hacia el ápice, 10-12 x 3.5-4.0 mm. **Clinandrio** corto, entero a ligeramente dentado. **Antera** no vista. **Polinios** no vistos. **Rostelo** no visto. **Lóbulos laterales del estigma** no vistos. **Nectario** no visto. **Cápsula** subglobosa, pedicelo 5-7 mm de largo, cuerpo en la parte central del ovario, 23-38 x 15-17 mm, cuello apical 5-9 mm de largo.

Epiphytic or lithophytic, caespitose **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, terete at the base, laterally compressed towards the apex, straight. **Leaves** 5-12, distributed along the upper 2/3 of the stem; foliar sheaths laterally compressed; blade linear-lanceolate acuminate, mucronate, coriaceous, slightly carinate, 10:1 to 20:1. **Inflorescence** apical, racemose, producing new racemes with time and thus becoming pluri-racemose, producing one flower at a time from each raceme. **Floral bracts** much shorter than the ovary, amplexicaul, triangular, acute to acuminate. **Ovary** terete, slightly inflated, unornamented, as long as the sepals. **Sepals** spreading, linear-lanceolate, acuminate, 9-veined with a pair of secondary veins and thus appearing 11-veined; lateral sepals falcate, oblique. **Petals** spreading, linear-lanceolate, acuminate, 5-veined, with a pair of secondary veins and thus appearing 7-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, similar in length; bicallose, calli laminar, prominent; lateral lobes united to the mid-lobe along 1/3-1/2 of their length; semi-ovate, obtuse to acute, margin entire; mid-lobe linear to linear-lanceolate, acute, margin entire. **Column** slightly arched, dilated towards the apex. **Clinandrium-hood** short, entire to slightly dentate. **Capsule** sub-globose, pedicel short, about equal in length to the apical neck.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Ranging around the upper Amazon Basin in Peru, Ecuador, Colombia Brazil and Venezuela, the Guyana Shield as far as the adjacent north coast of South America including Trinidad and Tobago. Epiphytic at 40-1200 m altitude. Flowering and in fruit throughout the year.

RECOGNITION: *Epidendrum longicolle* belongs to the Nocturnum Group which is characterized by the sympodial, caespitose plants, short, racemose or pluri-racemose inflorescence, without spathaceous bracts, usually large, star-shaped flowers, with similar sepals and petals, and the Nocturnum Subgroup which has cane-like stems, non-thickened towards the middle, and usually successive flowers; the flowers are mostly indistinguishable in shape. The species can be recognized by the laterally compressed stems with 5-12 linear-lanceolate, acuminate leaves, length/width 10:1 to 20:1, 5-15 x 0.4-0.8 cm, sepals [28-] 30-42 mm long, lateral lobes of the lip joined to the mid-lobe through 1/3 to ½ its length, ovary 30-40 mm long. It has been confused with *Epidendrum minus* (Cogn.) Hágsater has 5-9 lanceolate leaves, 4:1 a 6:1, 4.5-11.5 x 0.8-2.0 cm, flowers smaller, 22-32 mm long, lateral lobes of the lip free to the base, divergent, ovary 21-33 mm long. *Epidendrum micronocturnum* Carnevali & G.Romero generally has 2-4[6] leaves distributed along the apical half of the stem, 0.4-0.6 cm wide, small flowers, sepals 15-20 mm long, and the ovary 22-26 mm long. *Epidendrum mininocturnum* Dodson, ranging along the Pacific slope in southern Colombia and northern Ecuador, has small plants, 5-15 cm tall, 4-5 narrow leaves (8-20 mm wide), small flowers, sepals 27-28 mm long, ovary 27-30 mm long, and is easily recognized by the numerous thickened veins on the lateral lobes of the lip.

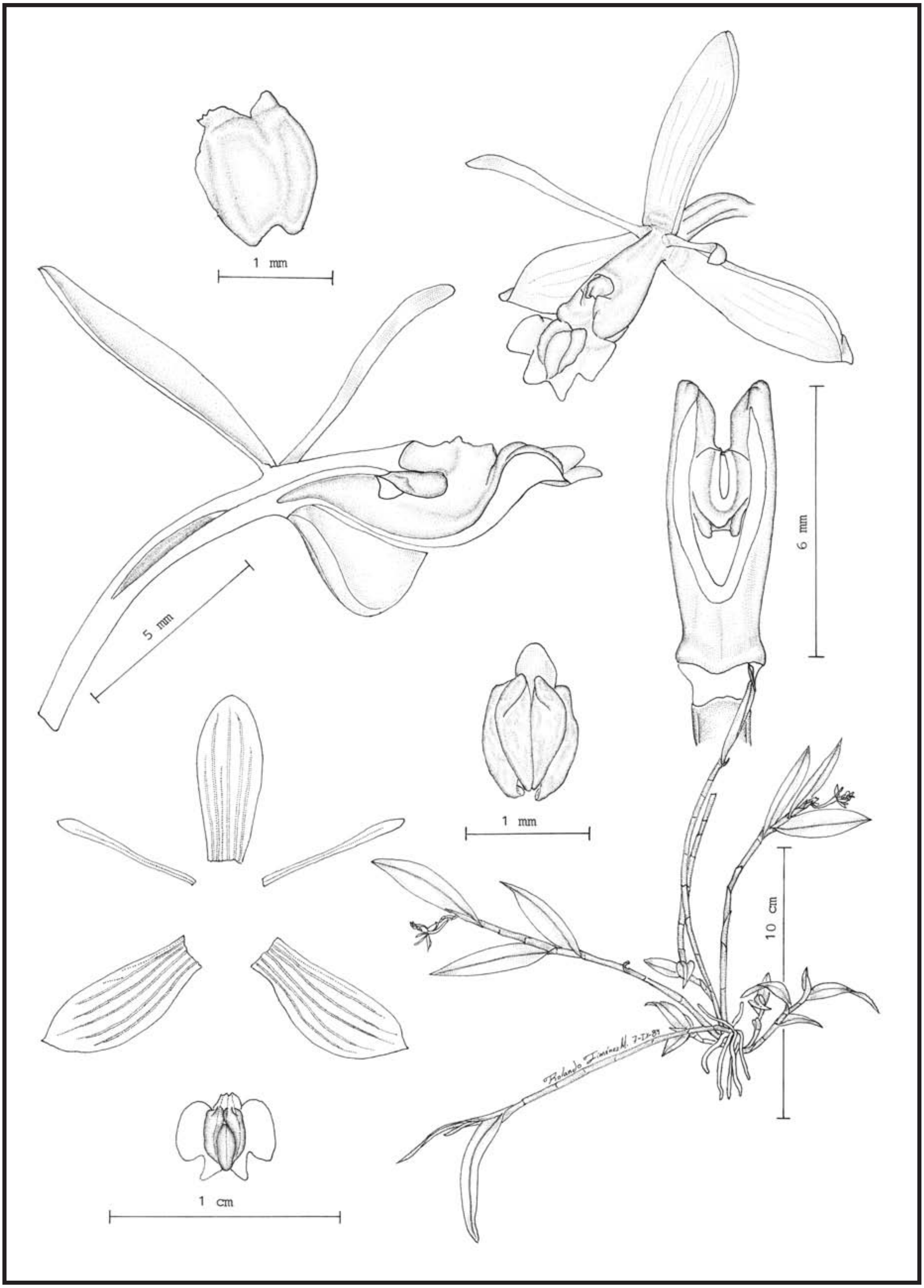


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ETYMOLOGY: From the Latin *longi*- long, and *collum,* neck, in reference to the long, thin column, characteristic of this species.

REFERENCES: Carnevali, G., & G. Romero, 1996, Orchidaceae Dunstervillorum VII: The *Epidendrum nocturnum* Alliance in the Venezuelan Guyana and Guianas, **Lindleyana** 11(4): 239-249. Romero, G., & G. Carnevali, 2000, **Orchids of Venezuela: An Illustrated Field Guide**, Second Edition. Romero G., G. A., C. Gómez, & G. Carnevali F.C., 2010, Novelties in the Orchid flora of Venezuela III - *Epidendrum*, **Harvard Papers in Botany** 15(1): 165-170.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM MACBRIDEI C.Schweinf. **Plate 1351**

EPIDENDRUM MACBRIDEI C.Schweinf., Bot. Mus. Leafl. 11(4): 94. 1943.

Type: PERU: Huánuco: Pampayacu, Hacienda at mouth of Río Chinchao, at about 1070 m, 19-25 July 1923, ***J. Francis Macbride 5081.*** Holotype: F! Isotype: AMES 61588!

Hierba epífita, simpodial, cespitosa, 10-30 cm de alto. **Raíces** basales, delgadas, blancas, ca. 1-1.5 mm grosor. **Tallos** sencillos, erectos, tipo caña, teretes, delgados, algo flexuosos, 7-20.5 x 0.1-0.3 cm; cubiertos en la base por vainas tubulares, no foliares, escariosas y fibrosas con el tiempo, 1.5 cm de largo. **Hojas** 5-10, distribuidas a lo largo de la mitad apical del tallo, articuladas, dísticas, submembranáceas; vaina tubular, 1-1.7 cm de largo; lamina angostamente elíptico-lanceolada, acuminada, margen entero, extendido, 2.5-10.3 x 0.6-1.75 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, produciendo nuevos racimos con el tiempo del mismo pedúnculo y entonces incipientemente paniculada, suberecta, corta, pauciflora, laxa, 4-6 cm de largo; pedúnculo subterete, delgado, erecto, recto, 6-9 mm de largo; desprovisto de brácteas; raquis con racimos suberectos, muy cortos, paucifloros, 2-3 cm de largo, cada racimo con una bráctea prominente, tubular en la base y conduplicada en el ápice, acuminada, 10-16 mm de largo. **Brácteas florales** más cortas que el ovario, angostamente triangulares, acuminadas, abrazadoras, 3-4 mm de largo. **Ovario** terete, delgado, no inflado, no ornamentado, 10-12 mm de largo. **Flores** sucesivas, resupinadas, sépalos y pétalos verdes, la mitad apical de la columna y el labelo blancos, inmaculados; sin fragancia. **Sépalos** extendidos, libres, carnosos, oblanceolados, obtusos, ligeramente cóncavos, 5-nervados, margen entero, extendido, 7-8.5 x 2-3 mm; los **laterales** ligeramente oblicuos, diminutamente apiculados, 7.5-9 x 2.5-3.1 mm. **Pétalos** extendidos, libres, filiformes, 1-nervados, obtusos, margen entero, extendido, 8 x 0.7 mm. **Labelo** unido a la columna, 3-lobado, base ligeramente cordada, margen entero, 3 x 5 mm; ecalloso; disco con 3 quillas engrosadas, muy prominentes y alargadas hasta el seno apical; lóbulos laterales ovado dolabriformes, alargados hasta el ápice del lóbulo medio o algo más cortos que este, 1.3 x 2.6 mm; lóbulo medio pequeño, anchamente deltado a transversalmente rectangular, con el ápice truncado o ligeramente emarginado y entonces formando un par de apéndices diminutamente triangulares, 1 x 2 mm. **Columna** corta, recta, gruesa, 6 mm de largo; bialada en el ápice, las alas subcuadradas prominentes. **Clinandrio** reducido, margen entero. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** prominentes, de ½ del largo de la cavidad estigmática. **Nectario** poco profundo, sin penetrar el ovario, no ornamentado. **Antera** ovoide, 4-locular. **Polinios** 4, tipo ala de pájaro; caudículas laminares. **Cápsula** no vista.

Epiphytic, sympodial, caespitose **herb**. **Roots** basal, thin, white. **Stems** simple, erect, cane-like, terete, thin, somewhat flexuous; base covered by non-foliar, scarious tubular sheaths, becoming fibrous with age. **Leaves** 5-10, distributed throughout the upper half of the stem, articulate, distichous, sub-membranaceous; sheath tubular; blade narrowly elliptic-lanceolate, acuminate, margin entire, spreading. **Inflorescence** apical, racemose, sub-erect, short, lax, few-flowered; producing new racemes with time from the old peduncle, each with a bract at the base; peduncle sub-terete, thin erect, very short. **Floral bracts** much shorter than the ovary, thin, not inflated, smooth. **Flowers** successive, resupinate, sepals, petals and basal half of the column green, apical half of the column and lip white, immaculate; without fragrance. **Sepals** spreading, free, fleshy, oblanceolate, obtuse, slightly concave, 5-veined, margin entire, spreading, the lateral sepals slightly oblique, minutely apiculate. **Petals** spreading, free, filiform, 1-veined, obtuse, margin entire, spreading. **Lip** united to the column, 3-lobed, base slightly cordate, margin entire; ecallose, margin entire, spreading; disc provided with 3 large, prominent, thickened keels, reaching the apical sinus; lateral lobes ovate dolabriform, the apical corner nearly reaching the apex of the mid-lobe; mid-lobe small, widely deltate to transversely rectangular, the apex truncate to slightly emarginated and the forming a pair of small triangular lobes. **Column** short, straight, thick, the apex 2-winged, the wings sub-quadrate, prominent. **Clinandrium-hood** reduced, margin entire. **Rostellum** sub-apical, slit. **Nectary** shallow, without penetrating the ovary, smooth. **Anther** ovoid, 4-celled. **Pollinia** 4, "bird-wing" type, about equal in size, caudicles laminar.

OTHER SPECIMENS: ECUADOR: Without locality, 1960, *Oxford Univ. Exped. 2362*, K-L! **Morona-Santiago:** camino Limón-Méndez, ca. km 22, 795 m, 21 XI 1988, *Hágsater 9640*, AMO x3! Road Limón (General Plaza)-Macas, ca km 20 from Limón, 700-900 m, 26 III 1974, *Harling 12861*, GB! (Illustration voucher). Road from Méndez to Morona (Cutucú), 900-1200 m, 4 II 1987, *Hirtz 3124*, MO! Road Méndez-Cutucú, 700 m, I 1989, *Hirtz 4100*, MO! QCNE! Pachicutza, km 140 on road Loja-Gualaquiza, along Río Zamora and along the road, 900-1000 m, 26 IV 1973, *Holm-Nielsen 4594*, AAU! AMES! Between Méndez and Paute, ca. 600 m, 11 VI 1979, *Løjtnant 14540*, AAU x2! Los Encuentros, on limit to Prov. Zamora, 840 m, 26 IX 1967, *Sparre 19000*, S! **Zamora-Chinchipe:** Along río Zamora, about 5 km from Zamora, 900 m, 30 VI 1944, *Camp s.n.* NY! 6 km NE of Zamora, 1100 m, 26 VII 1960, *Dodson 195*, SEL! km 13 road from Loja to Zamora, 2800 m, 20 II 1986, *Embree 35*, MO! **PERU:** Without locality, *Raimondi 422*, USM! **San Martín:** along road Rioja-Pedro Ruiz, 1170 m, 23 III 1998, *van der Werff 15518*, AMO x2! MO! USM! Around Tocache, 400-700 m, 25 V 1975, *Schunke 8626*, MO! **Huánuco:** subandina, Cuchero, *[Poeppig] 1603*, W-R! tracing AMES 38284! **Junín:** Jauja, Río Kachingari, Satipo, VIII 1940, *Ridoutt s.n.* USM 11574! **Pasco:** Parque Nacional Yanachaga-Chemillén, 1300 m, 14 XI 2004, *Becerra 259*, MO!

OTHER RECORDS: ECUADOR: Morona-Santiago: Road from Méndez to Morona (Cutucú), 900-1200 m, 4 II 1987, *Hirtz 3124*, slide AMO! Road Méndez-Cutucú, 700 m, I 1989, *Hirtz 4100*, slide, AMO! **PERU:** Selva Central, 29 V 2010, *Morón s.n.*, digital imagen, AMO!



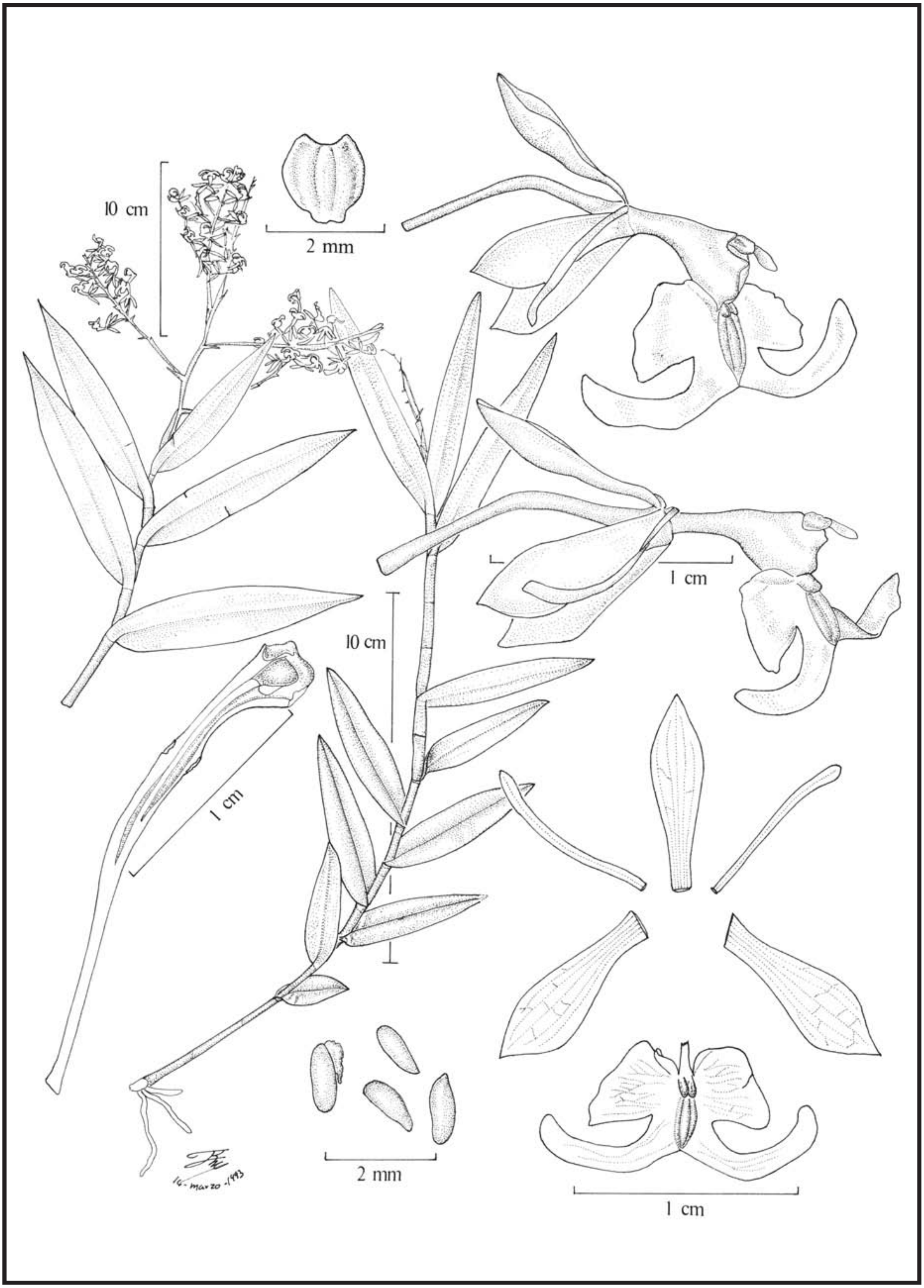
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DISTRIBUTION AND ECOLOGY: Known only from southern Ecuador and norther Peru, on the eastern side of the Andes, along the slopes of the tributaries of the Amazon river, at 400-1100 [2800?] m altitude, epiphytic in wet tropical forests. Flowering apparently throughout the year.

RECOGNITION: *Epidendrum macbridei* belongs to the Pseudepidendrum Group is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, apical inflorescence, lacking a spathaceous bract, the petals filiform and the lip usually 3-lobed, with 3 parallel fleshy keels, the apical lobe often bifurcate. Turialvae Subgroup which has a racemose and few-flowered inflorescence on an elongate peduncle, usually producing new racemes over the years and thus pluriracemose and the pollinia "bird-wing" type. The species is recognized by the small plants, to 30 cm tall, producing short successive racemes from the same peduncle, successive flowers with spreading sepals 7-9 mm long, column 6 mm long, with a pair of prominent sub-quadrate wings at the apex, the lip ecallose, disc with 3 thickened, very prominent keels that reach the apical sinus of the lip. *Epidendrum poeppigii* Hágsater, has taller plants (30-68 cm), very long (10-22 cm), linear-acuminate leaves, a paniculate inflorescence, sepals strongly reflexed, 3 mm long column, the lip with a pair of small, sub-globose calli. *Epidendrum parviflorum* Ruiz & Pavón also has larger plants, stems 40-60 cm long, with simultaneous small flowers, sepals 5 mm long, column 3.5 mm long, and the lip with a single callus.

ETYMOLOGY: In honor of James Francis MacBride (1892-1976), American botanist, who collected extensively in Peru, in the 1920's.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM MACROCERAS Schltr. **Plate 1352**

EPIDENDRUM MACROCERAS Schltr., Repert. Spec. Nov. Regni Veg., Beih. 7: 138. 1920.
Type: COLOMBIA: Santa Marta, [4000 ft, Aug.] 1898-1899, ***Herbert H. Smith "2418" [=2488]****.
Holotype: B destroyed. Lectotype (here designated): NY! (Illustration voucher). Isolectotypes AMES! CM! G! K-L! MO! P!

Hierba simpodial, cespitosa, terrestre o epífita de 50 cm de altura o algo más. **Raíces** basales, carnosas, delgadas, escasas, 1.8-2.5 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base a lateralmente aplanados hacia el ápice, erectos, 41 x 0.24-0.46 cm. **Hojas** 14, alternas, distribuidas a lo largo de las 2/3 partes apicales del tallo, las basales más pequeñas, lisas, subcoriáceas; vaina tubular, finamente estriada en seco, 1.5-2.5 cm de largo; lámina elíptico lanceolada, acuminada, margen entero, 3.8-14.5 x 1.4-2.9 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, paniculada, florece una sola vez, 19 cm de largo; provista de 5 racimos, suberectos, de 8.2-10.2 cm de largo; cada uno de ellos con una bráctea basal, triangular, acuminada, margen entero, 7-17 mm de largo; pedúnculo recto, delgado, desprovisto de brácteas, 3.8 cm de largo. **Brácteas florales** mucho más cortas que el ovario, angostamente triangulares, agudas, abrazadoras, 1-4 mm de largo. **Flores** ca. 100, simultáneas, resupinadas, membranáceas, amarillo verdosas con el labelo blanco, sin datos de fragancia. **Ovario** terete, delgado, no inflado, no ornamentado, 11-13 mm de largo. **Sépalos** reflexos, libres, angostamente espatulados, unguiculados, agudos, 5-nervados, margen entero, extendido, 9 x 2.3-2.8 mm. **Pétalos** reflexos, libres, filiformes, obtusos, 1-nervados, margen entero, extendido, 9 x 0.6 mm. **Labelo** unido a la columna, trilobado, cordado en la base, más ancho entre los lóbulos apicales que entre los basales, margen entero, 5.6 x 13 mm; bicalloso, los callos delgados, cortos; disco provisto de 3 carinas delgadas, agudas; los lóbulos basales oblicuamente triangulare dolabriforme, 3.2 x 3.2 mm; lóbulo medio bilobado y fuertemente divaricado, los lobos oblongos, falcados y truncados, 2.3 x 3.2 mm. **Columna** recta, delgada, dilatada hacia el ápice, 7 mm de largo. **Clinandrio** reducido, margen entero. **Antera** obovoidea, 4-locular. **Polinios** 4, tipo ala de pájaro, desiguales el par interior más pequeño; las caudículas suaves, laminares, más cortas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, de la ½ del largo de la cavidad estigmática. **Nectario** penetrando 1/3 del ovario, no inflado, no ornamentado. **Cápsula** no vista.

Terrestrial or epiphytic, sympodial, caespitose **herb**. **Roots** basal, fleshy, thin. **Stem** simple, cane-like, terete at the base, laterally compressed above, erect. **Leaves** 14, alternate, distributed throughout the apical 2/3 of the stem, smooth, sub-coriaceous; sheath tubular, finely striated when dry; blade elliptic lanceolate, acuminate, margin entire. **Inflorescence** apical, paniculate, flowering only once; peduncle straight, thin, bare. **Floral bracts** much shorter than the ovary, narrowly triangular acute. **Flowers** ca. 100, simultaneous, resupinate, membranaceous, yellow green with white lip. **Ovary** terete, thin, smooth. **Sepals** reflexed, free, narrowly spatulate, unguiculate, acute, 5-veined, margin entire, spreading. **Petals** reflexed, free, filiform, obtuse, 1-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base cordate, wider between the apical lobes than between the basal lobes, margin entire; bicallose, the calli thin, short, disc 3-carinate, thin, acute; basal lobes obliquely triangular-dolabriform; mid-lobe bilobed, the lobes strongly divaricate, oblong, truncate and falcate. **Column** straight, thin, dilated towards the apex. **Clinandrium-hood** reduced, entire. **Anther** obovoid, 4-celled. **Pollinia** 4, bird-wing type, unequal, the inner pair shorter, caudicles soft, laminar, shorter than the pollinia. **Rostellum** apical, slit. **Nectary** penetrating 1/3 of the ovary, smooth.

OTHER SPECIMENS: COLOMBIA: César: Sierra Nevada de Santa Marta, Río Donachui, between Sogrome and Sacarecungüe, 5750 ft, 9 V 1974, *Plowman 3659*, AMES! COL! SEL!

DISTRIBUTION AND ECOLOGY: Known only from the lower southern slopes of the Sierra Nevada de Santa Marta, in northern Colombia, at 1200-1725 m altitude. It was collected together with *E. repens* Cogn. Flowering in May and August.

RECOGNITION: *Epidendrum macroceras* belongs to the Pseudepidendrum Group is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, apical inflorescence, lacking a spathaceous bract, the petals filiform and the lip usually 3-lobed, with 3 parallel fleshy keels, the apical lobe often bifurcate, and the pollinia "bird-wing" type and Paniculatum Subgroup which has green and white flowers, often marked with purple on the disc of the lip and apex of the column. The species is recognized by very long, falcate, oblong, truncate apical lobes of the lip, and the basal lobes longer towards the apex than towards the base; the plants are intermediate in size, probably about 1 m tall; the color of the flowers is yellow green with the apex of the column and the lip white. *Epidendrum angaritae* Hágsater is somewhat similar, but the plants are shorter, the apical lobes acute and straight, not falcate, and the basal lobes of the lip longer at the base. *Epidendrum cirrhochilum* F.C.Lehm. & Kraenzl. has smaller flowers and very long, acuminate apical lobes of the lip. *Epidendrum lilacinoides* Hágsater & E.Santiago (syn: *Epidendrum floribundum* Kunth var *lilacinum* Rchb.f.) has purple flowers with a white blotch on the lip, sepals 13-14 mm long. *Epidendrum floribundum* Kunth has prominent floral bracts, 6-12 mm long; flowers with green sepals and petals, the lip and apical half of the column white, the lateral lobes dolabriform, and the mid-lobe formed by a pair of linear, non falcate, strongly divaricate lobes. *Epidendrum paniculovenezolanum* Hágsater & E.Santiago has much taller plants (ca. 1.8 m), the leaves strongly tinged purple on the underside, sepals 13-14 mm long, ochre-green, dorsally tinged purple-brown, the petals green, and the lip white.

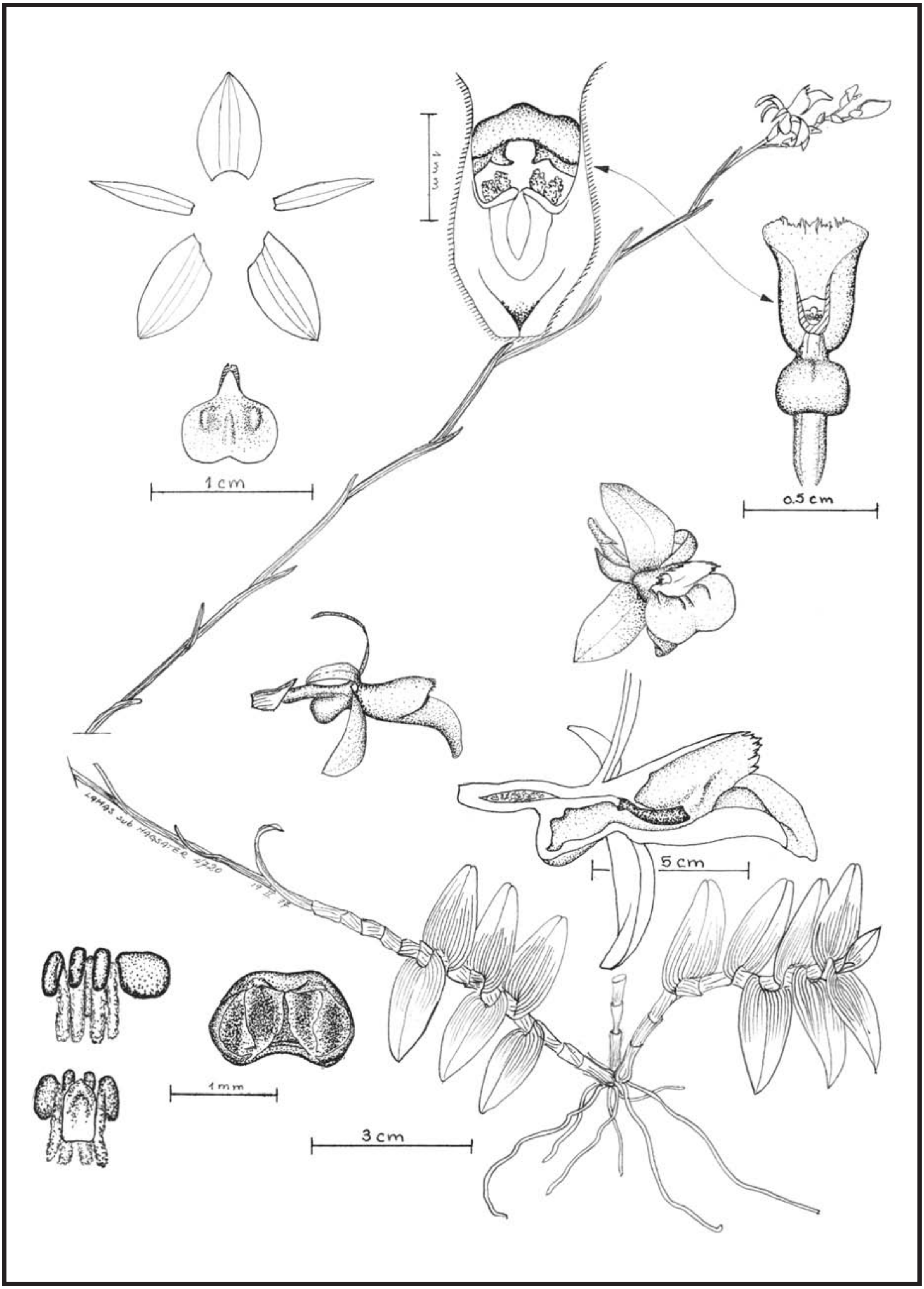


***NOTE:** Though the original publication cites collection number 2418, all duplicates indicate 2488. We have not found any duplicate of collection 2418, and thus suspect it is a typographical error.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek μακρος, large, and κερακ, horn, in reference to the prominent, long apical lobes of the lip which stand out as two large horns.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM MACROCLINIUM Hágsater **Plate 1353**

EPIDENDRUM MACROCLINIUM Hágsater, Orquídea (Mexico City) 10(2): 319. 1987.

Type: MEXICO: Chiapas: 64.5 km al S de Chancalá, 2100 ft, collected 31 October 1972, pressed cult. 2 July 1983, ***William R. & Beatrice Thurston T-1952 sub Hágsater 5484.*** Holotype: AMO! Clonotype: 2 April 1984, MEXU!

Hierba epífita, simpodial, cespitosa, 7-33 cm de alto. **Raíces** basales, carnosas, delgadas, 1-1.5 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente aplanados, extendidos y postrados sobre la superficie donde crece, rectos, 4-13 x 0.1-0.5 cm. **Hojas** 12-23, distribuidas a lo largo del tallo, articuladas, alternas, equidistantes; vainas tubulares, lisas, verdosas a levemente teñidas de morado, 5-10 x 1.5-5 mm; lámina angostamente ovado lanceolada, torcida en la base de manera que todas las láminas quedan extendidas en un plano horizontal al tallo, obtusa a subaguda, subcoriácea suculenta, de color verde gris con las nervaduras foliares en ocasiones resaltadas y son muy evidentes hacia la base de las hojas, margen entero, extendido, 1.5-4.5 x 0.6-1.5 cm (en ejemplares herborizados se encoge lateralmente de manera que se ve mucho más angosta). **Bráctea espatácea** ausente. **Inflorescencia** apical, elongada, recta, racemosa, produciendo racimos nuevos durante varios años y entonces pluriracemosa, plurianual, laxa, 4.5-26 cm de largo; pedúnculo terete, delgado, recto, 3-23.5 cm de largo; provisto de 6-14 brácteas (que lo cubren casi completamente) tubulares, acuminadas, de tamaño decreciente, escariosas y fibrosas con el tiempo, 1-3.3 cm de largo; raquis corto, terete, delgado, fractifexo, 8-42 mm de largo. **Brácteas florales** más cortas que el ovario, infundibuliformes, con el ápice oblicuo, agudo, 1-2 mm de largo. **Ovario** terete, delgado, liso, con una vesícula muy prominente detrás del perianto, 5-8 mm de largo. **Flores** 3-10 [27] por racimo, sucesivas, desarrollándose una a una a la vez, resupinadas, totalmente blancas o con sépalos y pétalos amarillo rosado, translúcidos, el labelo amarillento más o menos teñido de rosado a rojo borgoña, callo y columna amarillenta; fragancia muy débil al amanecer a hipoclorito de calcio. **Sépalos** ovados, agudos, 3-nervados, margen entero, extendido, 5.5-7 x 3-4 mm; el **dorsal** algo reflexo, los **laterales** extendidos a reflexos, unidos de manera oblicua a la columna. **Pétalos** reflexos, libres, linear lanceolados, ápice agudo, 1-nervados, margen entero, extendido, membranáceos, 5-6 x 0.5-1 mm. **Labelo** unido a la columna, obreniforme, cuneado en la base, el ápice con un seno poco profundo, margen entero, extendido, 3-5 x 5-7 mm; bicalloso, los callos prominentes, carnosos, delgados, paralelos, alejados entre si al igual que del ápice de la columna; provisto de una quilla intercallosa, baja, que se desvanece cerca del ápice de la lámina. **Columna** gruesa, recta, muy corta, ca. 2 mm de largo, con un clinandrio muy largo. **Clinandrio** prominente, cubriendo casi la mitad del labelo, margen apical fimbriado dentado, ca. 3 mm de largo. **Antera** reniforme, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, más largas que los polinios, viscidio semilíquido, glauco. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** obsoletos. **Nectario** penetrando cerca de 1/3 del ovario, formando una vesícula muy prominente, globosa, ventral justo detrás del perianto, liso interiormente. **Cápsula** elipsoide, ornamentada con una vesícula hacia el ápice; cuerpo 10-15 x 7-9 mm; pedicelo 5 mm de largo; cuello apical reducido, en ocasiones con el perianto persistente.

Epiphytic, sympodial, caespitose **herb. Roots** basal, thin. **Stems** simple, cane-like, laterally compressed, spreading and prostrate, straight. **Leaves** 13-23, distributed throughout the stem, alternate; sheaths tubular, smooth; blade narrowly ovate-lanceolate, always spreading in the same plane as the stem, obtuse to sub-acute, sub-coriaceous-succulent, gray-green, sometimes with the foliar veins thickened and very evident on the basal half of the upper side of the leaves. **Inflorescence** apical, elongate, straight, initially racemose, producing new racemes over several years and then pluriracemose; peduncle terete, thin, straight, provided and totally covered by 6-14 tubular, acuminate bracts, progressively shorter, becoming fibrous with time; rachis short, zigzag. **Floral bracts** shorter than the ovary, widely infundibuliform, the apex oblique, acute. **Flowers** 3-10 [27] per raceme, successive, resupinate, all white or sepals and petals yellow-pink, translucent, the lip yellowish more or less tinged with pink or burgundy red, callus and column yellowish; fragrance, weak at sunup, of calcium hypochloride. **Sepals** ovate, acute, 3-veined; the dorsal sepals somewhat reflexed, the lateral sepals spreading to reflexed, obliquely united to the column. **Petals** reflexed, free, linear-lanceolate, apex acute, 1-veined. **Lip** united to the column, obreniform, base cuneate, with a deep sinus at the apex, margin entire; bicallose, the calli prominent, fleshy, thin, parallel, somewhat far from the apex of the column and each other; provided with a central, low keel. **Column** thick, very short, straight, with a very long clinandrium-hood. **Clinandrium-hood** prominent, covering nearly half the lip, apical margin fimbriate-dentate. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed, sub-equal; caudicles soft and granulose. **Rostellum** apical, slit. **Nectary** penetrating 1/3 of the ovary, forming a very prominent globose, ventral vesicle behind the perianth. **Capsule** ellipsoid, ornamented with a ventral vesicle near the apex, with a short, thin pedicel.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Widespread along the Atlantic lowlands of Mesoamerica from southern Veracruz (Mexico) to the Cochó in western Colombia, epiphytic in rainforests, from sea level to 1500 m altitude. Flowering throughout the year.



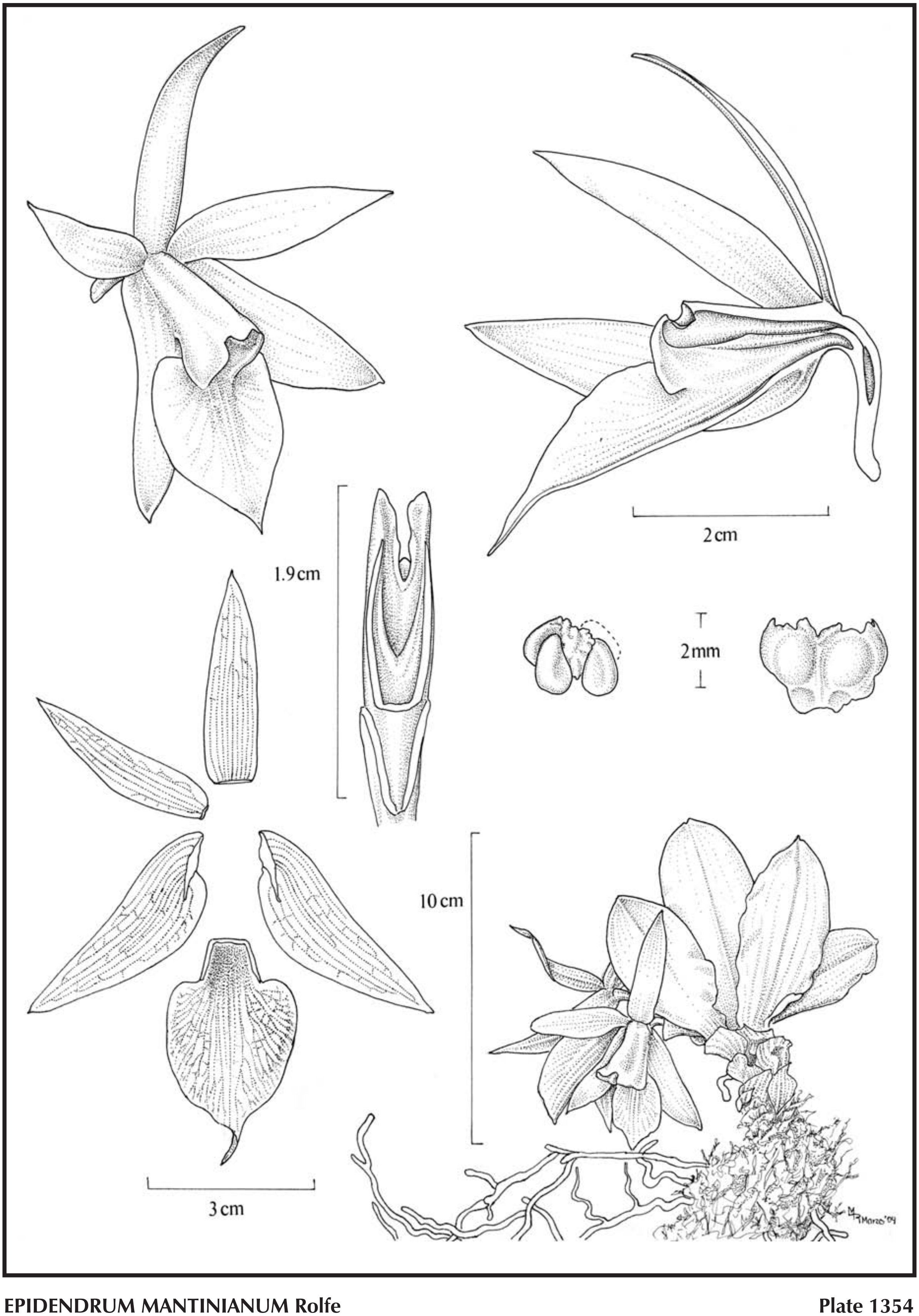
RECOGNITION: *Epidendrum macroclinium* belongs to the Physinga Group which is characterized by the generally small, caespitose plants, the inflorescence apical and racemose producing new racemes with time and thus pluriracemose, the successive flowers opening one at a time on an elongate peduncle with acuminate bracts, the lip entire and the ovary with a prominent vesicle. The species is recognized by the 1.5-4.5 cm long, spreading, ovate-lanceolate, gray-green leaves, sometimes with the foliar veins thickened and very evident on the basal half of the upper side of the leaves, the reflexed petals, obreniform lip with the narrow calli separated from the apex of the column and each other, and the very prominent, fimbriate-dentate clinandrium-hood. *Epidendrum prostratum* (Lindl.) Cogn. is vegetatively very similar, but the sepals and petals are partly spreading, the base of the lip deeply cordate, with 3 prominent keels on the disc, and the clinandrium-hood deeply emarginate, the margin entire. *Epidendrum physodes* Rchb.f. has the leaves inserted at a 45° angle to the stem, lanceolate, short-acuminate, gray-green leaves 3.5-7 cm long, spreading petals, the lip transversely elliptic with a pair of prominent, rounded calli in front of the column, and the clinandrium-hood short, fleshy, the margin slightly crenate.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek μακρος, large, and κλινη, cline, bed, in reference to the very large clinandrium-hood, which is fimbriate-dentate and distinguishes this species.

REFERENCES: Hágsater, E., 2005, *Epidendrum* in F. Pupulin, **Vanishing Beauty: Native Costa Rican Orchids 1**: 291, published as *Epidendrum physodes* Rchb.f. San José, Costa Rica. Editorial de la Universidad de Costa Rica. Misas, G., 2005, **Orquídeas de la Serranía del Baudó, Chocó-Colombia,** published as *Epidendrum postratum* (Lindl.) Rchb.f. p. 208-209.

Authors: E. Santiago & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM MANTINIANUM Rolfe **Plate 1354**

EPIDENDRUM MANTINIANUM Rolfe, Ill. Hortic. 39: 42, t. 150. 1892.

Type: Hort. Ghent, *Linden*. Neotype (here designated): PERU: Amazonas: Bongara, Lake Pomacochas, 2100 m, 26 July 1965, ***David E. Bennett Jr. 1887*,*** AMES! (Illustration voucher). Color print of neotype, AMO!
Synonyms: *Kalopternix martinianus* (Rolfe) Garay & Dunsterville, Venez. Orch. Illustr. 6: 40. 1976. *Nanodes mantini* (Rolfe) L. Linden, Orch. Exot. 847. 1894 [as *N. mantini* L. Linden].

Hierba epífita, simpodial, cespitosa, erecta, 10 cm de alto. **Raíces** basales, carnosas, gruesas, 0.5-2 mm grosor. **Tallo** nulo, rizomatoso, envuelto y oculto entre varias vainas imbricadas, escariosas, grises en material seco, ovadas, de 13-15 mm de largo. **Hojas** 2, sésiles en el tallo rizomatoso, articuladas, coriáceas; lámina elíptica, ápice obtuso redondeado, con una quilla dorsal baja, margen entero, aparentemente glaucas, 4.2-5.7 x 2.1-3.8 cm. **Bráctea espatácea** ausente. **Inflorescencia** racemosa, florece una sola vez, ligeramente flexuosa, sésil, de 1-2 flores, 5 mm de largo, pedúnculo grueso. **Brácteas florales** mucho más cortas que el ovario, triangulares, agudas, abrasadoras, 4 mm de largo. **Flores** 1-2, simultáneas, resupinadas, grandes, variables, de color verde pálido fuertemente teñidas de rojo borgoña, labelo verde pálido con manchas y las venas marcadas de pardo rojizo, columna glauca, sin datos de fragancia. **Ovario** terete, delgado, no inflado, no ornamentado, formando un ángulo de 90° con respecto a la columna, 23 mm de largo. **Sépalos** agudos, diminutamente apiculados, 9-nervados, margen extendido y entero; el **dorsal** extendido, libre, angostamente triangular ovado, 24-30 x 8 mm; los **laterales** entreabiertos, unidos de manera oblicua a la mitad basal de la columna, angostamente ovados, oblicuos, 30-48 x 8-9 mm. **Pétalos** entreabiertos, libres, angostamente lanceolados, acuminados, 3-nervados, las nervaduras laterales ramificadas desde la base dando la apariencia de ser 5-nervados, margen extendido y entero, 36 x 8 mm. **Labelo** unido a la columna, entero, ovado cordiforme, los lados paralelos, rectos en su parte media basal, base ligeramente cordada, ápice abruptamente triangular, agudo a acuminado, ecalloso, desprovisto de quillas, margen entero; 22-43 x 15-22 mm. **Columna** recta, gruesa, gradualmente más amplia hacia el ápice, 20 mm de largo. **Clinandrio** corto, margen entero. **Antera** 4-locular, reniforme, ápice truncado. **Polinios** 4, obovoideos, lateralmente comprimidos; caudículas granulosas, tan largas como los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** amplio, apenas penetrando el ovario, no inflado, liso. **Cápsula** no vista.

Epiphytic, sympodial, caespitose, erect **herb. Roots** basal, fleshy, thick. **Stems** obsolete, rizomatous, thick, enveloped by several scarious, imbricating sheaths. **Leaves** 2, sessile the apex of the stem, articulate, coriaceous, blade elliptic, apex obtuse-rounded, with a low dorsal keel, margin entire, apparently glaucous. **Inflorescence** racemose, flowering only once, somewhat flexuous, sessile, two-flowered, hidden in between the leaves. **Floral bracts** much shorter than the ovary, triangular, acute. **Flowers** 1-2, simultaneous, resupinate, large, variable, sepals and petals pale green marked with burgundy red, lip pale green blotched and veined with reddish brown, column glaucous. **Ovary** terete, thin, smooth, forming a 90° angle with the column. **Sepals** acute, minutely apiculate, 9-veined, margin spreading and entire; the **dorsal sepal** spreading, free, narrowly triangular-ovate; the **lateral sepals** partly spreading, obliquely united the basal half of the column, narrowly ovate, oblique. **Petals** partly spreading, free, narrowly lanceolate, acuminate, 3-veined, the laterals veins branching from the base so as to appear 5-veined, margin spreading, entire. **Lip** united to the column, entire, ovate-cordiform, half of the basal sides straight and parallel, the base somewhat cordate, apex abruptly triangular, acute to acuminate, ecallose, without keels, margin entire. **Column** straight, thick, gradually thicker towards the apex. **Clinandrium-hood** short, margin entire. **Anther** 4-celled, reniform, apex truncate. **Pollinia** 4, obovoid, laterally compressed; caudicles granulose, as long as the pollinia. **Rostellum** apical, slit. **Nectary** wide, apex penetrating the ovary, smooth.

OTHER SPECIMENS: PERU: Cajamarca: San Ignacio, trocha limite con "La Unión", 2200 m, 1 XI 1995, *Díaz 7833*, MO! Huacabamba, XI 1876, *Vidal 4409*, K-L!

DISTRIBUTION AND ECOLOGY: Apparently endemic to the upper reaches of the Marañón river basin in northeastern Peru, on both sides, on the Cordillera Oriental as well as the Cordillera Occidental, at 2100-2200 m altitude. Flowering from July to November. [Cogniaux (1898-1902) cited Brazil as the origin of the plant, probably based on Rolfe's reference (1892) to Rio de Janeiro as the origin of the type of *Nanodes discolor*. There is no confirmed record of the species in Brazil. *Tropicos* cites Brazil, Colombia and Venezuela, without any voucher.]

RECOGNITION: *Epidendrum mantinianum* belongs to the Kalopternix Group characterized by reduced rhizomatous stem with fleshy-coriaceous leaves, and a sessile inflorescence without spathaceous bracts, fleshy leaves, and one or few fleshy, compact, star-shaped flowers, often variously decorated in burgundy red color, the column straight, thick, blunt. The species is recognized by the upright elliptic leaves, the large flowers, lateral sepals 30-48 mm long, and the ovate-cordiform, acute to acuminate lip. It is similar to *Epidendrum andrettae* Hágsater which has a pendent habit, single, long leaves, the column geniculate with the ovary, at a 135° angle, and large flowers, sepals 38 mm long, with acuminate segments, the petals 5-veined; the lip base orbicular, apex narrowly triangular, concave, margin denticulate-erose at the base, the apical triangle entire. *Epidendrum oxapampense* Hágsater has smaller flowers, acute floral segments and, the lip short apiculate, the petals 3-veined and the coloration of the flowers green with a single, large pink to maroon blotch on the lip. *Epidendrum sophronitis* Linden & Rchb.f. has an upright habit, a single cuneate, elliptic, acute leaf per pseudobulb, 37 x 15 mm, and the acuminate sepals are 12 mm long.



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***NOTE:** Bennett & Christenson (1998) cite a specimen as deposited at UC, which we have no record of; they do not mention the AMES specimen. The illustration they published, identified as *Epidendrum sophronitis* Linden & Rchb.f., based on *Bennett 7656*, corresponds to a different species, *E. andreettae* Hágsater & Dodson.

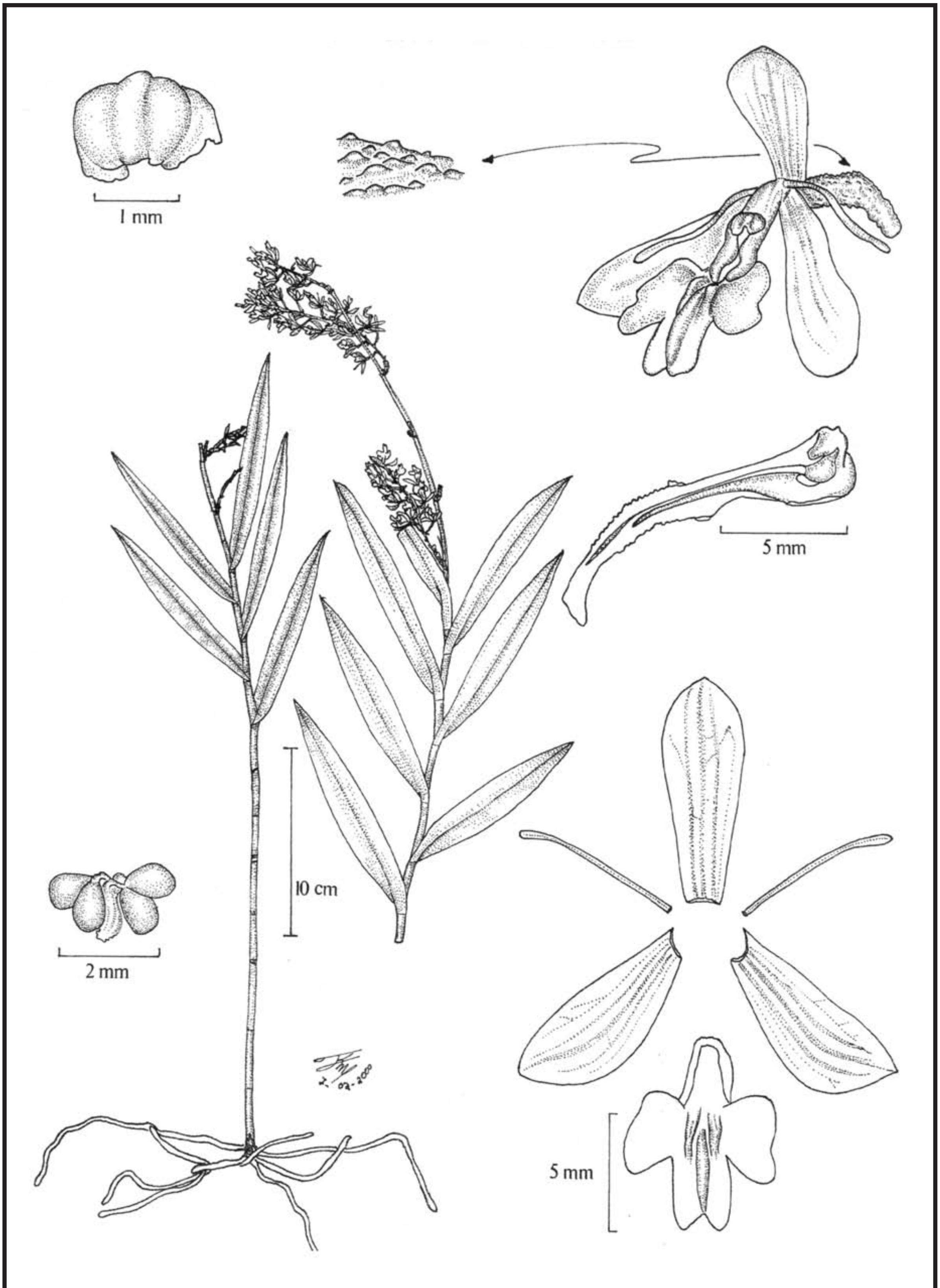
CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Mr. Georges Mantin (1850-1910) of Chateau de Bel Air, Olivet, France, a prominent amateur collector and hybridizer of orchids during the late XIX century.

REFERENCES: Bennett, D. E. & E. A. Christenson, 1998, **Icon. Orchid. Peruv.** pl. 472. Cogniaux, A., 1898-1902, Orchidaceae II, in Martius, **Flora Brasiliensis** 3(5): 178-9.

Author: E. Hágsater **Illustrator: M. López R.** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM MARTINEZII L.Sánchez & Carnevali **Plate 1355**

EPIDENDRUM MARTINEZII L.Sánchez & Carnevali, Harvard Papers Bot. 5(2): 408. fig. 3. pag 409. 2001.

Type: MEXICO: Chiapas: Ocosingo: En ejido Loma Bonita, 150 m, 24 January 1992, ***Esteban Martínez y R. Lombera 26079.*** Holotype: AMO 16920! (Illustration voucher). Isotype: CICY!

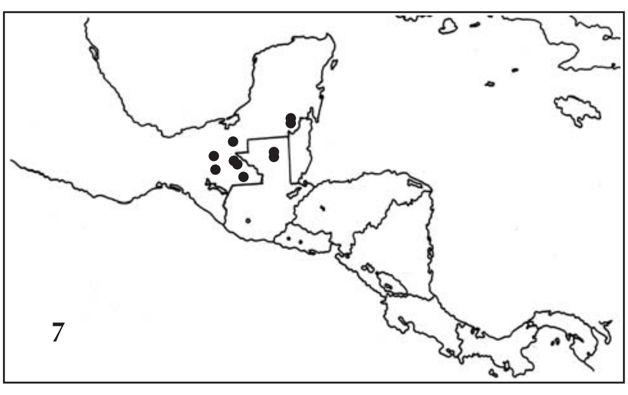
Hierba epífita, simpodial, cespitosa, erecta, 40-70 cm de alto, incluyendo la inflorescencia. **Raíces** basales, carnosas, gruesas, 2-3.2 mm de grosor. **Tallos** sencillos, tipo caña, teretes, rectos, 35-60 x 0.35-1 cm. **Hojas** 5-12, distribuidas en la mitad apical del tallo; vaina foliar tubular, terete, papirácea cuando vieja y después de haber perdido el limbo, 1-1.5 cm de largo; lámina angostamente elíptica a lanceolada, cortamente acuminada, mucronada, ligeramente carinada, subcoriácea, margen entero, extendido, 4-13 x 1.4-2 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, pluriracemosa, 10-25 cm de largo, racemosa en la primera floración, florece de los nudos de la inflorescencia primaria en años posteriores, dando la apariencia de un racimo compuesto, con varios racimos a la vez, el racimo elongado y laxo; pedúnculo 2-5 cm de largo, cubierto por 1-2 brácteas imbricadas, tubulares, oblongo triangulares, agudas, envolventes, 1-1.5 cm de largo; raquis terete, liso. **Brácteas florales** más cortas que el ovario, abrazadoras, triangulares, agudas, 1.5-2.0 mm de largo. **Ovario** terete, verrugoso, 6-8 x 1.0-1.5 mm. **Flores** 10-15(-25) por racimo, simultáneas, resupinadas, amarillo anaranjadas, generalmente difuminadas de café chocolote, mitad basal de la columna verde, mitad apical de la columna y labelo blancos, fragancia débil a pescado. **Sépalos** parcialmente extendidos, obovados, obtusos, mucronados, raramente dorsalmente verrugosos, margen extendido, entero, 7-8 x 3.0-4.5 mm; el **dorsal** 3-nervado, las venas laterales se ramifican hacia el ápice; los **laterales** oblicuos, 5-nervados. **Pétalos** parcialmente extendidos, angostamente oblanceolados, obtusos, 1-nervados, margen extendido, entero, 6-8 x 0.2-0.3 mm. **Labelo** unido a la columna, trilobado, base truncada, 6-7 x 4-6 mm; bicalloso, callos laminares, prominentes; el disco con una carina central prominente, carnosa, la cual se prolonga hasta el seno del lóbulo medio; lóbulos laterales obovados, margen con un pequeño seno en el margen; lóbulo medio oblongo subrectangular, margen entero, ápice con un seno profundo y amplio. **Columna** recta, obcónica, delgada, 5-7 mm de largo. **Clinandrio** reducido, entero. **Antera** obovoide, 4-locular. **Polinios** 4, obovoideos, lateralmente comprimidos; caudículas suaves y granulosas, de longitud similar al tamaño de los polinios; viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de 1/3 de largo de la cavidad estigmática. **Nectario** penetrando casi la mitad del ovario, no ornamentado. **Cápsula** no vista.

Epiphytic, sympodial, caespitose, erect **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, terete, straight. **Leaves** 5-12, distributed along the upper half of the stem; sheath tubular, terete, becoming papiraceous with age, after loosing the blade; blade narrowly elliptic to lanceolate, short acuminate, mucronate, slightly carinate, sub-coriaceous, margin entire, spreading. **Inflorescence** apical, pluriracemose, much longer than the apical leaf, racemose at first flowering, producing new racemes from the nodes of the peduncle of the inflorescence in later years, thus appearing as compound racemose; raceme lax-flowered, elongate, peduncle of each raceme short, covered by 1-2 imbricating, tubular, oblong-triangular, acute bracts; rachis terete, smooth. **Floral bracts** much shorter than the ovary, triangular, acute. **Ovary** terete, verrucose. **Flowers** 10-15(-25) per raceme, simultaneous, resupinate, orange-yellow, generaly tinged with chocolate brown, basal half of the column green, apical half and lip white; fragrance weak, fish-like. **Sepals** partly spreading, obovate, obtuse, mucronate, rarely dorsally verrucose, margin spreading, entire; dorsal sepal 3-veined, the lateral veins branching near the apex, the lateral sepals oblique, 5-veined. **Petals** partly spreading, narrowly oblanceolate, obtuse, 1-veined, margin spreading, entire. **Lip** united to the column, 3-lobed, base truncate; bicallose, calli laminar, prominent, the disc with a central prominent, fleshy keel, which is prolonged to the sinus of the mid-lobe; lateral lobes obovate, apical margin with a shallow sinus; mid-lobe oblong-sub-rectangular, margin entire, apex with a deep, wide sinus. **Column** straight, obconical, thin. **Clinandrium-hood** reduced, entire. **Anther** obovoid, 4-celled. **Pollinia** 4, obovoid, laterally compressed, caudicles soft and granulose, about as long as the pollinia; viscidium semi-liquid, transparent. **Rostellum** apical, slit. **Nectary** penetrating nearly half of the ovary, unornamented.

OTHER SPECIMENS: MEXICO: Tabasco: Balancán, San Isidro, 11 VI 1939, *Matuda 3349,* AMES! MEXU! MICH! **Chiapas:** 100.6 km, La Cañada on return trip from Palenque but before Ocosingo, 1060 m, pressed 19 IX 1984, *Hágsater 5575*, AMES! AMO! NY! US! Ocosingo, Limestone area, near Laguna Ocotal Grande, ca 25-30 km southeast of Monte (Cerro) Libano (which is ca 455 km east of Ocosingo), ca. 950 m, 20 VII 1954, *Dressler 1447*, AMES! MEXU! MICH! NY! UC! US! Ocosingo, vertice del Río Chixoy sobre el camino Boca Lacantum-Chapul, 130 m, 28 V 1986, *Martínez 16149*, MEXU! A 6.4 km al SSE de Nuevo Guerrero, 380 m, 9 IX 2002, *Martínez 35583*, MEXU! Laguna Ocotal Grande, ca. 10 km al E de Tani Perla (25-30 km al SE de Monte Líbano), 950-1000 m, 16 VII 1989, *Soto 6016*, AMO x2!(Illustration voucher plant with roots) Ocosingo, Estación Biológica de Chapul, ca. 200 m, 19 VI 1996, *Soto 8017*, AMO! Ibid. pressed 30 VII 2002, AMO! Ocosingo, Lacanjá, Chansayab, 300 m, *Soto 9764*, AMO! **Quintana Roo: Othón P. Blanco:** Burgos, a 2 km de la carretera que va al Ejido Dos Aguadas, 8 VIII 2000, *Carnevali 6224*, CICY. La Muertita, a unos 8 km del poblado sobre el camino principal de explotación forestal, col. 4 IV 1998, pressed 1 IX 1998, *Hágsater 12003,* AMO! Burgos a 2 km de la carretera que va al Ejido Dos Aguadas, 50 m, col. 14 VII 1998, pressed 2 IX 1998, *Hágsater 12095*, AMO! Aguada La Muerta, 12 km del pueblo de Tres Garantías, 15 IV 2000, *Ibarra 107*, CICY. **GUATEMALA: Petén:** Tikal National Park, Aguada San Geronimo, 29 IX 1960, *Contreras 1502*, LL! Dos Lagunas, on Uaxactun trail, 27 X 1960, Contreras 1567, LL! Tikal Nacional Park, on Remate Road, 3 VII 1959, *Lundell 16130*, LL! Valley of Rio de las Violetas, north of Nebaj, 5800-6000 ft., 22 VII 1964, *Proctor 25222*, LL! Parque nacional Tikal, en km 69 en camino Remate, 11 VII 1969, *Tun 171*, F! Tikal, hotel Posada La Selva, lado norte, Parque nacional Tikal, 10 XI 1970, *Tun 1409*, F! **BELIZE:** Without locality, *Adams K41*, K-L!

DISTRIBUTION AND ECOLOGY: Known from southeastern Mexico (Tabasco, northern Chiapas and the southern region of the Yucatan Peninsula), northern Guatemala and Belize. Epiphytic in tall and medium evergreen forest, at 50-1000 m altitude. Flowering from June to January.

RECOGNITION: *Epidendrum martinezii* belongs to the Anceps Group, which is recognized by the simple stems, generally elongate, compound racemose inflorescence producing new successive racemes with time, fleshy flowers, filiform to narrowly spatulate petals, and the Polyanthum Subgroup which has elongate, not sub-corymbose racemes. The species is recognized by the medium tall, terete stems, narrowly elliptic-lanceolate leaves 1.4-2 cm wide, the flowers with orange-yellow sepals (7-8 mm long) and petals generaly tinged with chocolate brown, the basal half of the column green, the apical half and the lip white, racemes lax-flowered, ovary verrucose, lip 3-lobed, lateral lobes with a shallow sinus. It is somewhat similar to *Epidendrum myodes* Rchb.f. from Costa Rica and western Panama, delicate plants, terete stems, small flowers, sepals 3-5 mm long, and the bilobed lateral lobes of the lip with the basal lobe rounded and the long, acuminate, falcate, apical lobe. *Epidendrum polyanthum* Lindl. has very robust plants, taller than 60 cm, terete stems, widely ovate-elliptic leaves 2-6 cm wide, and completely orange-yellow flowers, sepals 7.8-10 mm long. *Epidendrum tuxtlense* Hágsater, García-Cruz & L.Sánchez, endemic from the Gulf of Mexico slope in southern Veracruz and northern Oaxaca, has ancipitose stems, compact, dense-flowered racemes, smaller flowers, sepals 5-7.5 mm long, the ovary and sepals unornamented, the lip pale yellow, and the lateral sub-orbicular to sub-rectangular, entire.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Esteban M. Martínez Salas contemporary Mexican botanist who has collected extensively, especially in the state of Chiapas, and who collected the type material.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM MICRONOCTURNUM Carnevali & G.Romero **Plate 1356**

EPIDENDRUM MICRONOCTURNUM Carnevali & G.Romero, Lindleyana 11(4): 241. Fig. 1. 1996.

Type: VENEZUELA: Bolivar: 3 km S of El Paují Morichal, forest, savanna, and lower forested slope, 900 m, 4°30'N, 61°31'W, 8 November 1985, ***Ronald Liesner 19737.*** Holotype: VEN Isotype: MO 3405715!

Hierba epífita o litófita, simpodial, cespitosa, erecta, 9-15 cm de alto incluyendo la inflorescencia. **Raíces** basales, carnosa, 1.0-1.5 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente comprimidos hacia el ápice, teretes en la base, rectos, 4-12 x 0.08-0.14 cm. **Hojas** 2-4 raramente 5-6, distribuidas en la mitad apical del tallo; vaina foliar lateralmente comprimida, 0.5-1.5 cm de largo; lámina angostamente elíptica a lanceolada, obtusa, coriácea, ligeramente carinada, mucronada, 3.5-8.0 x 0.4-0.6 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, tornándose pluriracemosa con el tiempo, produce una flor a la vez por racimo, y varios racimos a través de los años, pedúnculo y raquis muy abreviada. **Bráctea floral** mucho más corta que el ovario, abrazadora, triangular, aguda a acuminada, 2.0-2.3 mm de largo. **Ovario** terete, ligeramente inflado, no ornamentado, 22-26 x 0.4-0.5 mm. **Flores** varias, sucesivas, producidas una a la vez por racimo, resupinadas, aparentemente siempre cleistógamas, sépalos y pétalos verde pálido o verde amarillentas, labelo y columna blanco; fragancia no registrada. **Sépalos** extendidos, linear oblanceolados, agudos, 7-9 nervados con varias nervaduras secundarias dando la apariencia de ser 11 nervados, 15-20 x 2.0-2.7 mm; los **laterales** ligeramente falcados, oblicuos. **Pétalos** extendidos, linear elípticos, agudos, 5-nervados, con venas secundarias dando la apariencia de ser 7-nervados, margen entero, extendido, 15-20 x 0.8-1.3 mm. **Labelo** unido a la columna, trilobado, base anchamente cuneada, 9-12 x 7-9 mm; bicalloso, callos laminares, prominentes; lóbulos laterales angostamente elípticos, falcados, obtusos a agudos, margen entero, margen externo irregularmente eroso, 5.5-9.0 x 2-3 mm; lóbulo medio linear a linear oblanceolado, agudo, margen entero, 7-11 x 0.5-1.2 mm. **Columna** ligeramente arqueada, dilatada hacia el ápice, 7-9 x 3.5-4.5 mm. **Clinandrio** corto, entero a ligeramente dentado. **Antera, polinios, rostelo, lóbulos laterales del estigma, nectario** y **cápsula** no vistos.

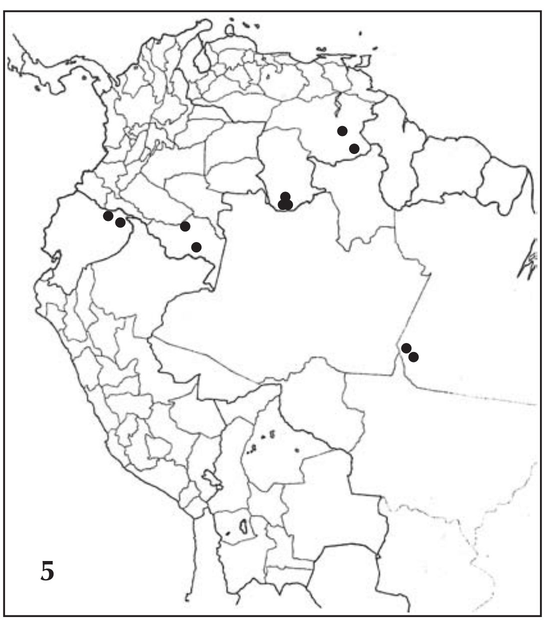
Epiphytic or lithophytic, sympodial, caespitose, erect, short **herb. Roots** basal, fleshy. **Stems** simple, cane-like, laterally compressed towards the apex, terete at the base, straight. **Leaves** 2-4, rarely 5-6, distributed along the apical half of the stem; sheaths laterally compressed, blade narrowly elliptic to lanceolate, obtuse, coriaceous, slightly carinate, mucronate. **Inflorescence** apical, racemosa, becoming pluri-racemose through the years, producing one flower at a time per raceme; peduncle and rachis very abbreviated. **Floral bracts** much shorter than the ovary, amplexicaul, triangular, acute to acuminate. **Ovary** terete, slightly inflated, unornamented, slightly longer than the sepals. **Flowers** several, successive, one per raceme at a time, resupinate, cleistogamous, sepals and petals pale green or yellowish green, lip and column white. **Sepals** spreading, linear-oblanceolate, acute, 7-9-veined with several secondary veins and thus appearing 11-veined; lateral sepals slightly falcate, oblique. **Petals** spreading, linear-elliptic, acute, 5-veined, with secondary veins so as to appear 7-veined, margin entire, spreading. **Lip** united to column, 3-lobed; bicallose, calli laminar, prominent; lateral lobes of the lip narrowly elliptic, falcate, obtuse to acute, external margin irregularly erose; mid-lobe linear to linear-oblanceolate, acute, margin entire. **Column** slightly arching, dilated towards the apex. **Clinandrium-hood** short, entire to slightly dentate.

OTHER SPECIMENS: COLOMBIA: Amazonas: Santa Isabel, Sabanas de Solarte, 4 XII 1996, *Arbeláez 682*, U! **Amazonas-Vaupés:** Río Apaporis: Raudal de Jirijirimo (below mouth of Río Kanamarí), ca. 900 ft, 21 I 1952, *Schultes 14959*, AMES! US! **VENEZUELA: Amazonas:** Río Negro: Cerro de la Neblina camp IV,15 km NNE of Pico Phelps, North branch of river in canyon, 780 m,15 III 1984, *Liesner 16826*, MO! Ibid. *Liesner 16969*, MO! **GUYANA:** Without locality, 23 II 1947*, M 449*, K-L! **ECUADOR: Sucumbios:** Zancudococha, orillas del lago, 200 m, 18 VIII 1993, *Celi 45*, QCA! Aucacocha, Cuyabeno, orillas del lago, 200 m, 28 VIII 1993, *Celi 150*, QCA! **BRASIL: Pará:** Alto Tapajós, Río Cururú, Missao Cururú, 140 m, 6 II 1974, *Anderson 10529*, NY! Alto Tapajós, Río Cururú, 17 II 1960, *Egler 1355*, MG! (Illustration voucher). **Amazonas:** Without locality, sent to AMO by Augusto Burle Gomes Ferreira, 27 VII 1997, AMO! **PERU: Amazonas:** Bagua, Comunidad Aguaruna de Wanás (km 92 Carretera Bagua-Imacita): Cerros Chinim, 800-860 m, 1 IX 1996, *Díaz 8125,* MO!

OTHER RECORDS: VENEZUELA: [**Bolívar:**] (upper end of Río Aonda, a small tributary of Río Carrao at the base of Auyantepui), flowered in cultivation in Caracas], 600 m, *Dunsterville 1381*, Illustration K-L!

DISTRIBUTION AND ECOLOGY: Widely distributed in the upper Amazon Basin in Ecuador, Colombia, Venezuela, Guyana, Brazil and Peru. Epiphytic at 200-900 m altitude. Flowering throughout the year.

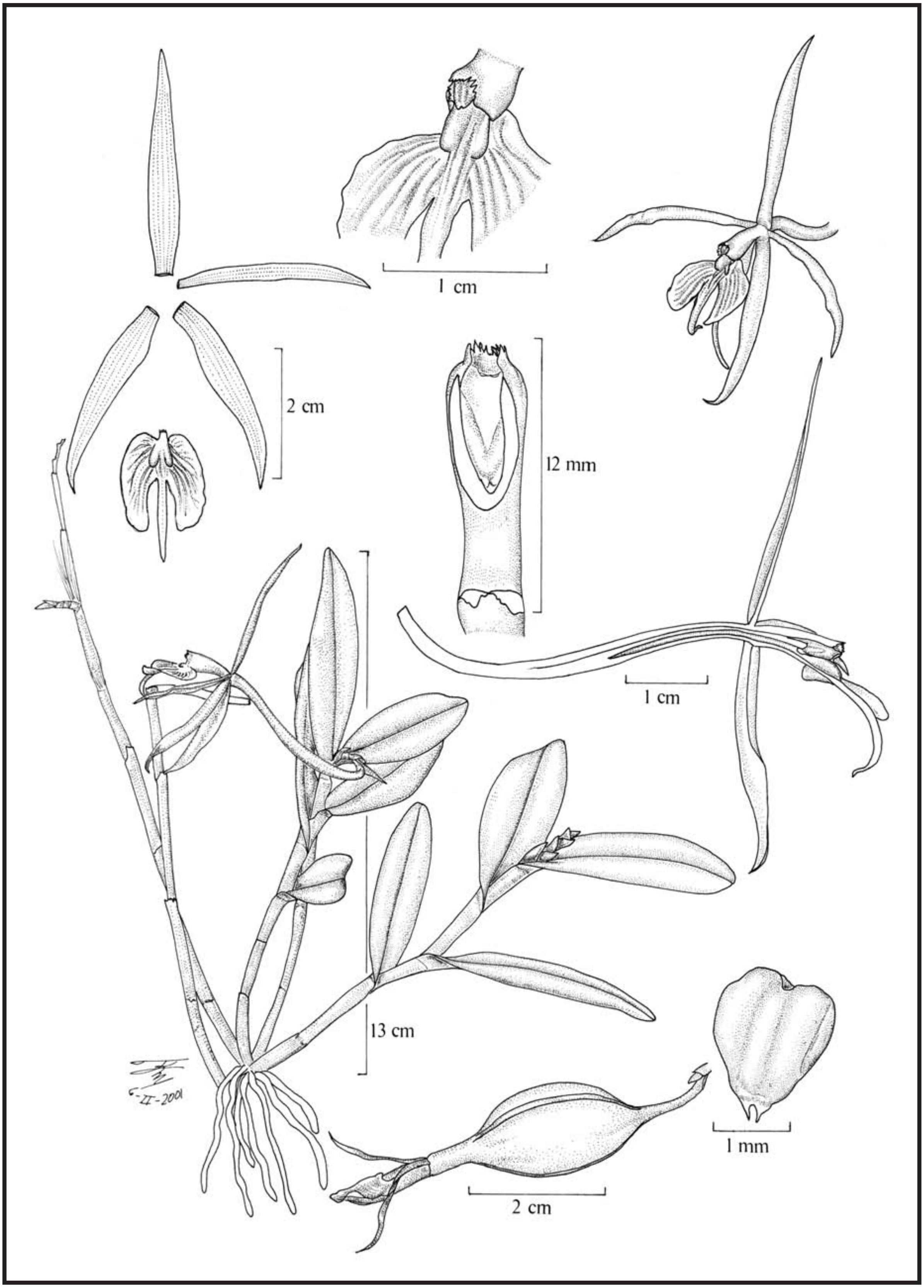
RECOGNITION: *Epidendrum micronocturnum* belongs to the Nocturnum Group which is characterized by the sympodial, caespitose plants, short, racemose or pluri-racemose inflorescence, without spathaceous bracts, usually large, star-shaped flowers, with similar sepals and petals, and the Nocturnum Subgroup which has cane-like stems, non-thickened towards the middle, and usually successive flowers; the flowers are mostly indistinguishable in shape. The species can be recognized by the short plants, 9-15 cm tall, generally with 2-4[5-6] narrow leaves, 4-6 mm wide, small flowers, sepals 15-20 mm long and the ovary 22-26 mm long. The species grows in the upper Amazon Basin as do *Epidendrum longicolle* Lindl. and *E. minus* (Cogn.) Hágsater, but the former has 5-12, linear-lanceolate, acuminate leaves 10:1 to 20:1, 5-15 x 0.5-0.8 cm, large flowers, sepals [28] 30-42 mm long, the lateral lobes are joined to the mid-lobe along ½-1/3 of their length, the ovary is longer, 30-40 mm long. The former species has stems with 5-9, lanceolate leaves, 4:1 to 6:1, 4.5-11.5 x 0.8-2.0 cm, sepals 22-32 mm long. *E. mininocturnum* Dodson is endemic to the lower Pacific slope of the Andes in southern Colombia and northern Ecuador, stems with 4-5 leaves, 3:1-4:1, 3.2-7.5 x 0.8-2.0 cm, larger flowers, sepals 27-28 mm long, a similar ovary, 27-30 mm long, lateral lobes of the lip with numerous thickened veins.



ETYMOLOGY: From the Greek μικρος, small, and the Latin *nocturnum*, in reference to the small size of the plants and flowers of this species when compared to the similar, more common and well-known species, *Epidendrum nocturnum* Jacq.

REFERENCES: Carnevali, G., & G. Romero, 1996, Orchidaceae Dunstervillorum VII: The *Epidendrum nocturnum* Alliance in the Venezuelan Guyana and Guianas. **Lindleyana** 11(4): 239-249. Romero, G., & G. Carnevali, 2000, **Orchids of Venezuela, An Illustrated Field Guide**. Second Edition, pg. 262.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM MININOCTURNUM Dodson **Plate 1357**

EPIDENDRUM MININOCTURNUM Dodson, Selbyana 2: 53. 1977.

Type: ECUADOR: Los Rios: Rio Palenque Science Center, km 56 Quevedo to Santo Domingo, 150-220 m, 10 March 1977, in fruit, ***Calaway H. Dodson 6654***. Holotype: SEL! Xerox AMO!

Hierba epífita, simpodial, cespitosa, de 12-15 cm de alto. **Raíces** basales, carnosas. **Tallos** sencillos, tipo caña, lateralmente aplanados, 5-10 x 0.31-0.4 cm. **Hojas** 4-5, distribuidas a lo largo del tallo, desiguales, las basales más pequeñas, coriáceas, alternas; vaina tubular, lateralmente aplanada, lisa, 7-15 x 3-4 mm; lámina elíptica a lanceolada, ápice desigualmente bilobado, carina dorsal baja, margen entero, 3.2-7.5 x 0.8-2.0 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, produce una sola flor a la vez y florece durante varios años; pedúnculo corto, lateralmente aplanado, cubierto totalmente por una bráctea semejante a las florales, pero más grande, 0.5-1.2 x 0.23 cm. **Brácteas florales** mucho más cortas que el ovario, abrazadoras, triangulares, agudas, diminutamente apiculadas, 4-5 x 1.6-2 mm. **Ovario** terete, liso, delgado, no ornamentado, 27-30 mm de largo. **Flores** una a la vez, sucesivas, resupinadas, sépalos verde rojizo a rosa, pétalos verde claro, labelo blanco y columna blanco verdosa en la base, roja hacia el ápice, callo amarillento. **Sépalos** extendidos, libres, linear lanceolados, acuminados, 5-nervados con numerosas venas secundarias dando la apariencia de ser 10-nervados, margen entero, revoluto, 27-28 x 4-5 mm. **Pétalos** extendidos, libres, lineares, acuminados, 3-nervados, margen entero, revoluto, 26-27 x 1.5-2.0 mm. **Labelo** unido a la columna, trilobado, base cordada, 18-20 x 18-19 mm; bicalloso, los callos laminares, prominentes; con 3 quillas intercallosas, delgadas desvaneciéndose hacia la base del lóbulo medio, la central mas prominente que las laterales, con numerosas venas evidentes en los lóbulos laterales, siendo mas prominentes las que se encuentran hacia el margen interior; lóbulos laterales oblícuos semiovados, redondeados a truncados, margen entero, 4-4.5 x 11-13 mm; lóbulo medio linear, acuminado, margen entero, ligeramente revoluto, 12-13 x 0.8-1.0 mm. **Columna** delgada, ligeramente arqueada, 12 mm de largo. **Clinandrio** prominente, margen irregularmente dentado. **Antera** ovada, 4-locular. **Polinios** no vistos. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** pequeños, de 1/6 de largo de la cavidad estigmática. **Nactario** penetrando ca. 1/3 del ovario, no ornamentado. **Cápsula** elipsoide, pedicelo 9 x 2 mm, cuerpo en el centro y ocupando casi toda la longitud del ovario, 24.5 x 13.6 mm, cuello 7.2 x 3.0 mm.

Epiphytic, sympodial, caespitose, short **herb. Roots** basal, fleshy. **Stems** simple, cane-like, laterally compressed. **Leaves** 4-5, distributed throughout the stems, unequal, the basal ones smaller, coriaceous, alternate; sheath tubular, laterally compressed, smooth; blade elliptic to lanceolate, apex unequally bilobed, with a low dorsal keel, margin entire. **Inflorescence** apical, racemosa, producing one flower at a time, flowering during several years; peduncle short, laterally compressed, totally covered by a singe bract similar to the floral bracts but larger. **Floral bracts** much shorter than the ovary, amplexicaul, triangular, acute, minutely apiculate. **Ovary** terete, smooth, thin, unornamented. **Flowers** one at a time, successive, resupinate, sepals reddish green to pink, petals pale green, lip white, column greenish white at the base, red towards the apex, calli yellowish. **Sepals** spreading, free, linear-lanceolate, acuminate, margin entire, revolute, 5-veined with numerous secondary veins and thus appearing to be 10 veined. **Petals** spreading, free, linear, acuminate, 3-veined, margin entire, revolute. **Lip** united to the column, 3-lobed, base cordate; bicallose the calli laminar, prominent, disc with 3 narrow keels that disappear towards the base of the midlobe, the mid keel more prominent than the laterals, with numerous evident veins on the lateral lobes, those near the interior margin more prominent; lateral lobes obliquely semi-ovate, rounded to truncate, margin entire; midlobe linear, acuminate, margin entire, slightly revolute. **Column** thin, slightly arching. **Clinandrium-hood** prominent, margin irregularly dentate. **Anther** ovate, 4-celled. **Rostellum** sub-apical, slit. **Nectary** penetrating 1/3 of the ovary, unornamented. **Capsule** pedicel short, body centered and occupying nearly the whole length, apical neck short.

OTHER SPECIMENS: COLOMBIA: Valle del Cauca: Córdoba, Dagua Valley, 80-100 m, 9 X 1922, *Killip 11795*, AMES! **ECUADOR: Esmeraldas:** Lita-San Lorenzo, km 6, 650 m, *Dodson 18628*, MO! QCNE Bilsa Biological Station, Mache Mountains, 35 km W of Quinindé, 400-600 m, 1 XII 1994, *Clark 354*, QCNE! Ibid. 500 m, 23 XI 1995, *Clark 1682*, MO QCNE! **Pichincha:** Rio Baba, 28 km S of Santo Domingo, 300 m, *Dodson 1160*, AMO! SEL! **Los Ríos:** Montañas de Ila, km 12 Patricia Pilar to 24 Mayo, 550 m, 28 VII 1976, *Dodson 6128*, AMO! SEL!

OTHER RECORDS: ECUADOR: Esmeraldas: Lita-San Lorenzo, km 6, 650 m, *Dodson 18628*, MO! Lita-San Lorenzo, muy abajo, cult. Ecuagenera, Cuenca, Ecuador, 100 m, 8 IX 1999, *Hágsater 12268*, flowers in spirit AMO! (Illustration voucher).

DISTRIBUTION AND ECOLOGY: Ranging along the lower slope of the Andes and Pacific lowlands in southern Colombia and northern Ecuador. Epiphytie in wet forests, 80-650 m altitude. Flowering from March to December.

RECOGNITION: *Epidendrum mininocturnum* belongs to the Nocturnum Group which is characterized by the sympodial, caespitose plants, short, racemose or pluri-racemose inflorescence, without spathaceous bracts, usually large, star-shaped flowers, with similar sepals and petals, and the Nocturnum Subgroup which has cane-like stems, non-thickened towards the middle, and usually successive flowers; the flowers are mostly indistinguishable in shape. The species can be recognized by the short plants (12-15 cm) with laterally compressed stems, 4-5 narrow leaves (8-20 mm wide), sepals 27-28 mm long, ovary 27-30 mm long, the lateral lobes of the lip with multiple thickened veins, margin entire. It is similar to *Epidendrum campyloglossum* P.Ortiz & Hágsater which is endemic to the lower Pacific slope of Colombia, has taller plants, (20 cm), larger flowers (sepals 35 mm), longer ovary (50 mm), and the linear midlobe of the lip recurved in natural position, sepals and petals creamy yellow and the column entirely white. It has been confused with *Epidendrum litense* Hágsater & Dodson which grows at higher altitudes (650-1900 m) along the Pacific slope of Colombia and northern Ecuador which ahs taller plants (to 28 cm), narrower leaves (0.6-0.9 cm), larger flowers (sepals 28-35 mm), a 26-36 mm long ovary, and the lip without keels nor thickened veins, the midlobe longer (17-21 mm). *Epidendrum micronocturnum* Carnevali & G.Romero is found in the Amazon Basin, has shorter stems (4-6 cm tall), narrower leaves (4-5 mm wide), smaller flowers, sepals 15-20 mm long, ovary 24-26 mm long, the lateral lobes of the lip narrowly elliptic, falcate, without thickened veins, and the outer margin irregularly erose.



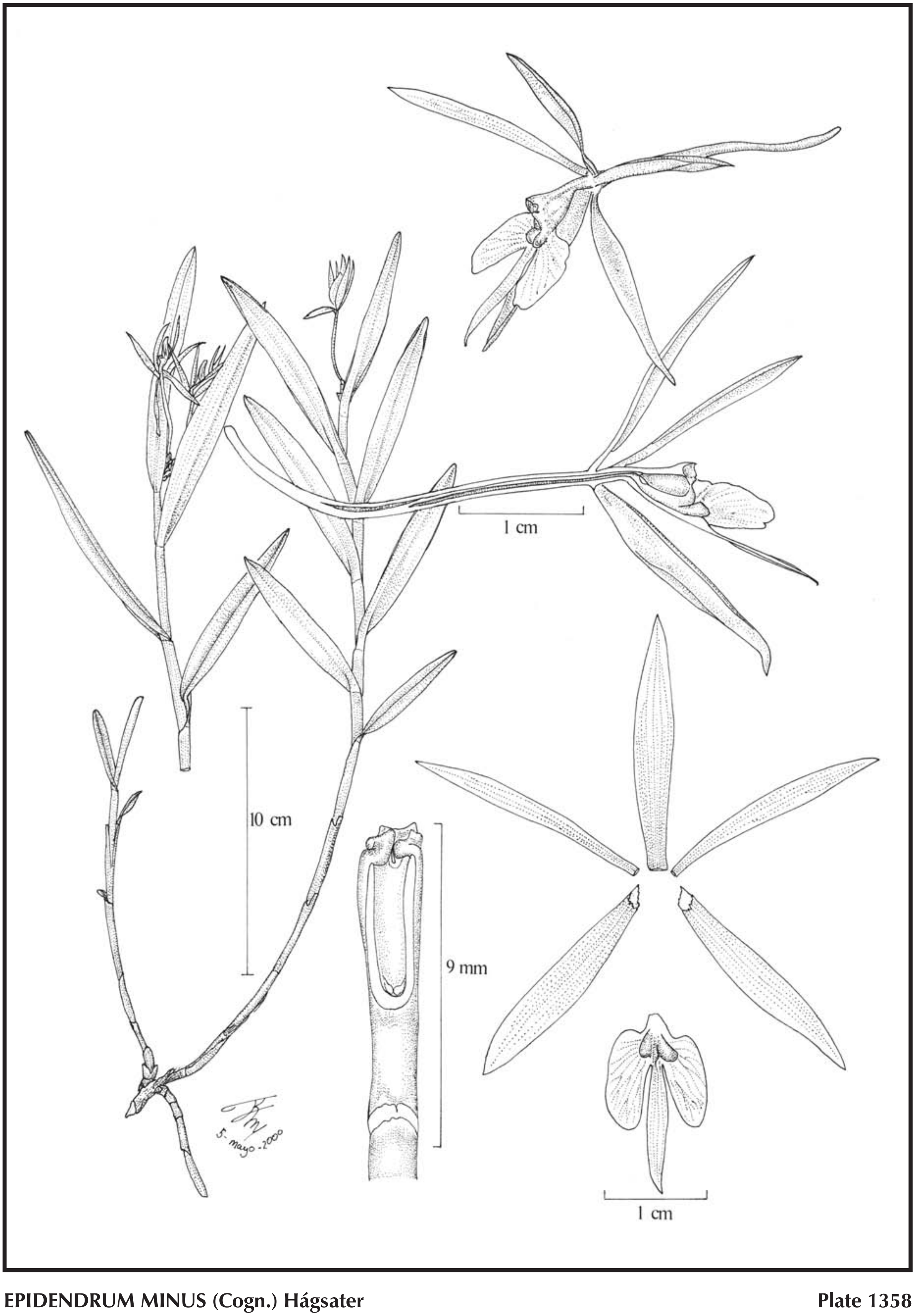
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CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: Named for its similarity to *Epidendrum nocturnum* Jacq. but much smaller in size in all its parts.

REFERENCES: Dodson, C. H. & A. H. Gentry 1978. Flora of Rio Palenque Science Center. **Selbyana 4(1-6)**: 154-155, pl. 71 fig. C. Dodson, C. H. 1980. *Epidendrum mininocturnum* in Dodson, C. H. & P. Marmol de Dodson, Eds. **Icon. Pl. Trop. 1**: pl. 89.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM MINUS (Cogn.) Hágsater **Plate 1358**

EPIDENDRUM MINUS (Cogn.) Hágsater, in Jørgensen, M., et al., Catalogue of the Vascular Plants of Ecuador, Monogr. Syst. Bot. Missouri Bot. Gard. 75: 956. 1999.

Basyonym: *Epidendrum nocturnum* Jacq. var. *minus* Cogn., Bull. Soc. Roy. Bot. Belg. 43: 323. 1909. Type: PERU: Loreto; Cerro de Escaler, 1300 m, March 1903, ***E. Ule 6689.*** Holotype: BR! Isotype: HBG, photo at NY! Xerox at AMO!

Hierba epífita o litófita, simpodial, cespitosa, 16-40 cm de alto incluyendo la inflorescencia. **Raíces** basales, carnosas, 1.5-2.0 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base, lateralmente comprimidos hacia el ápice, rectos, 10-34 x 0.18-0.48 cm. **Hojas** 5-9, distribuidas en los dos tercios apicales del tallo; vaina foliar lateralmente comprimida, ancipitosa, 15-30 mm de largo; lámina elíptica, ápice redondeado a bilobado, mucronada, coriácea, ligeramente carinada, 4:1-6:1, 4.5-11.5 x 0.8-2.0 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, produciendo con el tiempo nuevos racimos y entonces pluriracemosa, produce una flor a la vez por racimo. **Bráctea floral** mucho más corta que el ovario, abrazadora, triangular, aguda, 2.0-3.0 mm de largo. **Flores** 1-3 por racimo, raramente 4, sucesivas, resupinadas, sépalos rosados a rojizo violaceos, pétalos verde amarillentos a rojizo violáceos, labelo y columna blancos, callos amarillo pálido a blancos; fragancia no registrada. **Ovario** terete, ligeramente inflado, no ornamentado, 21-33 x 1-1.2 mm. **Sépalos** extendidos, angostamente elípticos, acuminados, margen entero, revoluto, 22-32 x 2.0-4.5 mm; el **dorsal** 9-nervado, con nervaduras secundarias dando la apariencia de ser 11-nervado, los **laterales** 7-nervados. **Pétalos** extendidos, angostamente elípticos, acuminados, margen entero, revoluto, 3-nervados, con ramificaciones pequeñas, 20-26 x 1.5-2.5 mm. **Labelo** unido a la columna, trilobado, 10-22 x 10-13 mm; bicalloso, callos laminares, prominentes; lóbulos laterales libres del lóbulo medio hasta la base, ovados, oblicuos, redondeados, margen entero, 8-10 x 4-6 mm; lóbulo medio oblongo, agudo, ligeramente ensanchado hacia la mitad, margen entero, 10-17 x 2-3 mm. **Columna** ligeramente arqueada cerca de la mitad, obcónica, gruesa, 7-12 mm de largo. **Clinandrio** corto, margen entero. **Antera** no vista. **Polinios**: no vistos. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** ocupando 1/3 de la cavidad estigmática. **Nectario** profundo, penetrando la mitad de la longitud del ovario. **Cápsula** ovoide, pedicelo 5 mm de largo, cuerpo 28-35 x 12-13 mm, cuello apical, 3-4 mm x 1.2-1.8 mm.

Epiphytic or lithophytic, sympodial, caespitose **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, terete at the base, laterally compressed towards ther apex, straight. **Leaves** 5-9, distributed along the apical 2/3 of each stem; foliar sheath laterally compressed, ancipitose; blade elliptic, apex rounded to bilobed, mucronate, coriaceous, slightly carinate, 4:1-6:1. **Inflorescence** apical, racemose, pdorucing new racemes with time and the pluri-racemose, producing one flower at a time per raceme. **Floral bract** much shorter than the ovary, amplexicaul, triangular, acute. **Flowers** 1-3 per raceme, rarely 4, successive, resupinate, sepals pink to reddish violaceous, petals yellowish green to reddish violaceous, lip and column white, calli pale yellow to white. **Ovary** terete, slightly inflated, unornamented. **Sepals** spreading, narrowly elliptic, acuminate, margin entire, revolute, dorsal sepal 9-veined with a pair of secondary veins so as to appear 11-veined, lateral sepals 7-veined. **Petals** spreading, narrowly elliptic, acuminate, margin entire, revolute, 3-veined somewhat short, branching. **Lip** united to the column, 3-lobed; bicallose, the calli laminar, prominent; lateral lobes free from the mid-lobe to the base, ovate, oblique, rounded, margin entire; mid-lobe oblong, acute, slightly widened towards the middle, margin entire. **Column** slightly arching around the middle, obconical, thick, long. **CLinandrium-hood** short, margin entire. **Rostellum** apical, slit. **Nectary** deep, penetrating half the length of the ovary. **Capsule** ovoid, pedicel and apical neck short.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Widespread throughout the Amazon basin in Peru, Ecuador, Colombia, Surinam, Brazil and Bolivia, epiphytic between 100 and 1900 m altitude. Collected mostly along river banks and in seasonally inundated forests. Flowering and in fruit throughout the year.



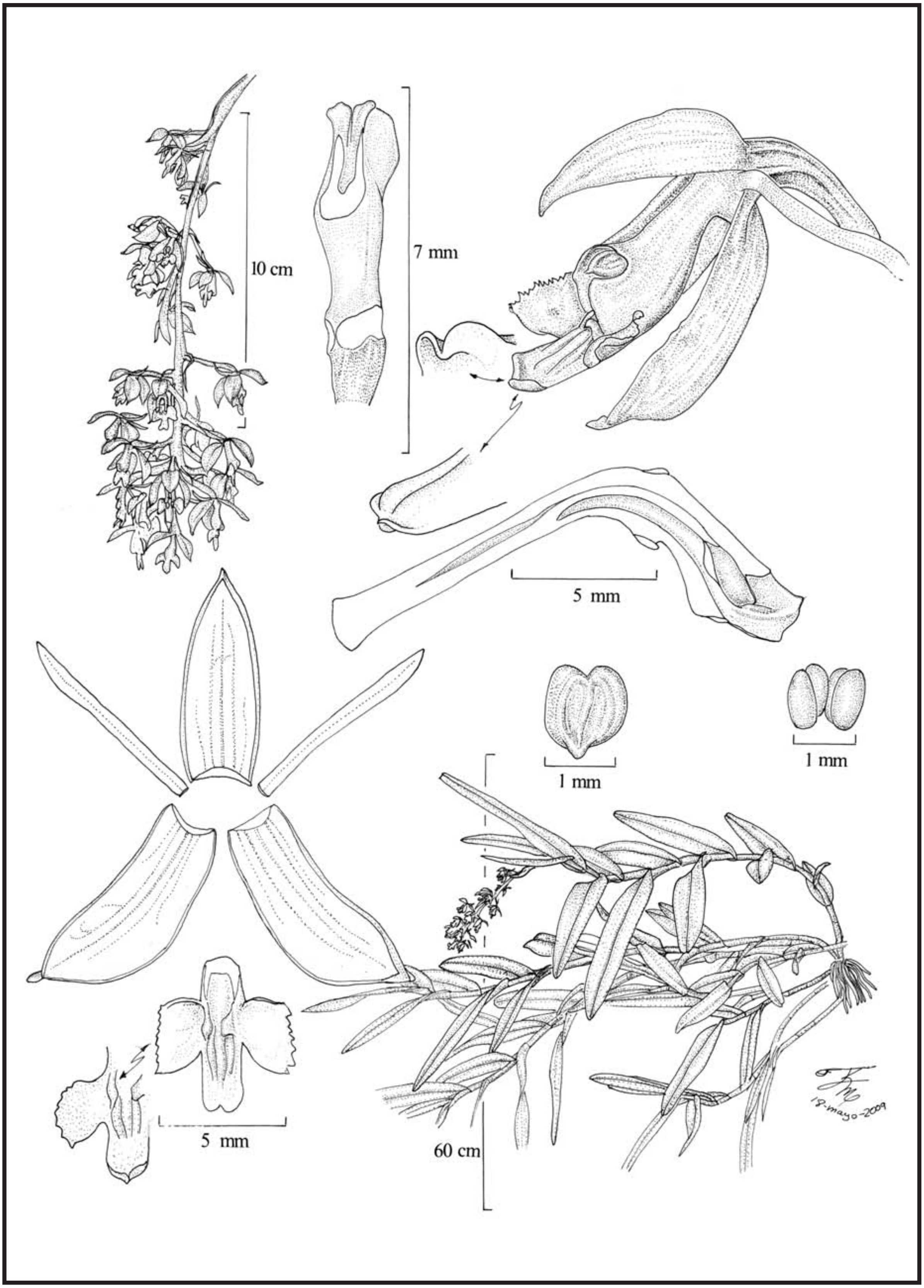
RECOGNITION: *Epidendrum minus* belongs to the Nocturnum Group which is characterized by the sympodial, caespitose plants, short, racemose or pluri-racemose inflorescence, without spathaceous bracts, usually large, star-shaped flowers, with similar sepals and petals, and the Nocturnum Subgroup which has cane-like stems, non-thickened towards the middle, and usually successive flowers; the flowers are mostly indistinguishable in shape. The species can be recognized by the laterally compressed, ancipitose, stems wuth 5-9, lanceolate leaves distributed along the upper 2/3 of the stems, 4:1 to 6:1, 4.5-11.5 x 0.8-2.0 cm, sepals 22-32 mm long, lateral lobes of the lip free from the mid-lobe, divergent, ovary 21-33 mm long. *Epidendrum longicolle* Lindl. has 5-12 linear-lanceolate leaves distributed throughout the stem, 10:1 to 20:1, 5-15 x 0.5-0.8 cm, larger flowers, sepals [28-] 30-42 mm long, lateral lobes of the lip united to the mid-lobe along 1/3 to 1/2 their length, ovary 30-40 mm long. *Epidendrum micronocturnum* Carnevali & G.Romero has stems with 2-4[6] leaves distributed along the apical half, the leaves 0.4-0.6 cm wide, and small flowers, sepals 15-20 mm long. *Epidendrum mininocturnum* Dodson, known only from the Pacific slope of the Andes in southern Colombia and Northern Ecuador has shorter plants with, 4-5 narrow leaves, (8-20 mm wide), the lateral lobes of the lip with numerous thickened veins.

CONSERVATION STATUS: DD: Data deficient.

ETYMOLOGY: From the Latin, *minus*, less, in reference to the smaller overall size of this species in comparison with the more widespread *E. nocturnum*.

REFERENCES: Dodson, C.H., & P. M. Dodson, 1982, *Epidendrum minus,* Orchids of Ecuador, **Icon. Pl. Trop.**, 5: pl. 428. 1982.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM MORILLOI Hágsater & E.Santiago Plate 1359

EPIDENDRUM MORILLOI Hágsater *et* E.Santiago, *sp. nov.*

Type: VENEZUELA: Edo. Mérida: margen de la carretera Mérida-Barinitas, epífita en semisombra, parche de selva montano baja (nublada), alt. 1000-1700 m; floración bajo cultivo en Finca La Empinada, Salado Alto, 12 km NO de Mérida, enero-febrero 2009, ***Gilberto Morillo 13854.*** Holotype: MER! Isotype: AMO! (Illustration voucher).

Epidendro klotzscheano Rchb. f. simile sed habitu minore et arcuato-pendulo, inflorescentia paniculata (cum racemis brevibus binis ad rhachidis basem) 26-28-flora, floribus minoribus albo-cremeis separabile.

Hierba epífita, simpodial, cespitosa, erecto arqueada, ca. de 60-86 cm de largo. **Raíces** basales, carnosas, ca. 4 mm de grosor. **Tallos** sencillos, tipo caña, arqueado horizontales, 45-60 (sin incluir hojas apicales) x 0.6-1.3 cm. **Hojas** 12-14, distribuidas a lo largo del tallo, alternas, articuladas, coriáceas, dorsalmente algo lustrosas; vainas tubulares, finamente estriadas, verdes, 2.5-6 x 0.6-1.3 cm; lámina lanceolada, subobtusa, margen entero, 6.5-26 x 2-4.8 cm. **Bráctea espatácea** 1, tubular, conduplicada, obtusa, de color pardo rojizo, 4.5 cm de largo. **Inflorescencia** apical, florece una sola vez, paniculada, arqueado nutante, pauciflora, subdensa, 18-19 cm de largo; pedúnculo subterete, cubierto casi en su totalidad por la bráctea espatácea, ca. 5 cm de largo; raquis con 2 racimos basales paucifloros, subsésiles, ca. 3 cm de largo; cada racimo con una bráctea basal prominente, semejante a la bráctea espatácea pero de menor tamaño, 3-4.5 cm de largo. **Flores** 26-28, simultáneas, resupinadas, carnosas, sépalos y pétalos de color blanco cremoso, el labelo y la columna de color blanco, fragancia suave. **Bractea floral** más corta que el ovario, linear, acuminada, abrazadora, 7-12 mm de largo. **Ovario** terete, delgado, no inflado, no ornamentado, ligeramente surcado y arqueado con respecto a la columna, 11-15 mm de largo. **Sépalos** libres, entreabiertos, algo arqueados hacia adelante, cóncavos, oblongo elípticos, subagudos, 5-nervados, margen entero; el **dorsal** 8.5 x 3-4 mm; los **laterales** oblicuos, dorsalmente mucronados, 10 x 3-5 mm. **Pétalos** reflexos a reflexo-colgantes, libres, lineares, agudos, 1-nervados, margen entero, 8.0-8.4 x 0.5-0.7 mm. **Labelo** unido a la columna, trilobado, base truncada, 4.4-5 x 5-6.2 mm; bicalloso, callos pequeños, laminares; disco tricarinado, las carinas carnosas, paralelas, desvaneciéndose antes de llegar al ápice del lóbulo medio; lóbulos laterales trapezoides, con los márgenes mas delgados, erosos, 2 x 3 mm; lóbulo medio oblongo, ápice truncado e incipientemente bilobado (al extenderse), apiculado, margen entero, algo involuto (en el ápice) en posición natural, 2.7-3 x 1.5 mm. **Columna** recta y delgada en la base, gradualmente más amplia y curvada hacia el ápice, 6.0-6.5 mm de largo. **Clinandrio** reducido, margen entero. **Antera** ovoide, 4-locular. **Polinios** 4, ovoides; caudículas no vistas. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando la mitad del largo de la cavidad estigmática. **Nectario** poco profundo, penetrando ¼ del ovario, no inflado, no ornamentado. **Cápsula** no vista.

Epiphytic, sympodial, caespitose, erect-arching **herb. Roots** basal, fleshy, thick, **Stems** simple, cane-like, arching to somewhat hanging. **Leaves** 12-14, distributed throughout the stem, alternate, articulate, coriaceous, dorsally somewhat lustrous; sheaths tubular, minutely striated, green; blade lanceolate, sub-obtuse, margin entire. **Spathaceous bract** 1, large, tubular, conduplicate, obtuse, reddish brown. **Inflorescence** apical, flowering only once, paniculate, arching-nutant, sub-densely few-flowered; peduncle sub-terete, nearly totally covered by a prominent basal bract, similar to the spathaceous bract, but smaller. **Flowers** 26-28, simultaneous, resupinate, fleshy, sepals and petals creamy white, the lip and column white. **Floral bracts** much shorter than the ovary, linear, acuminate, amplexicaul. **Ovary** terete, thin, not inflated, slightly arching with respect to the column. **Sepals** free, partly spreading, concave, somewhat arching forward, oblong-elliptic, sub-acute, 5-veined, margin entire; lateral sepals oblique, dorsally mucronate. **Petals** reflexed or pendent-reflexed, free, linear, acute, 1-veined, margin entire. **Lip** united to the column, 3-lobed, base truncate; bicallose, calli small, laminar; disc 3-keeled, the keels fleshy, parallel, disappearing before they reach the apex of the mid-lobe; lateral lobes trapezoid, the apical margin erose; mid-lobe oblong, apex truncate and slightly bilobed (when spread), apiculate, margin entire, apically somewhat involute in natural position. **Column** straight and thin at the base, gradually widened towards the apex. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, 4-celled. **Pollinia** 4, obovoid. **Rostellum** sub-apical, slit. **Nectary** shallow, penetrating ¼ of the ovary, not inflated, smooth.

OTHER SPECIMENS: None seen.

DISTRIBTION AND ECOLOGY: Known only from the type, on the Atlantic slope of the Cordillera de los Andes, epiphytic in cloud forest at 1000-1600 m altitude. Flowering in January and February.

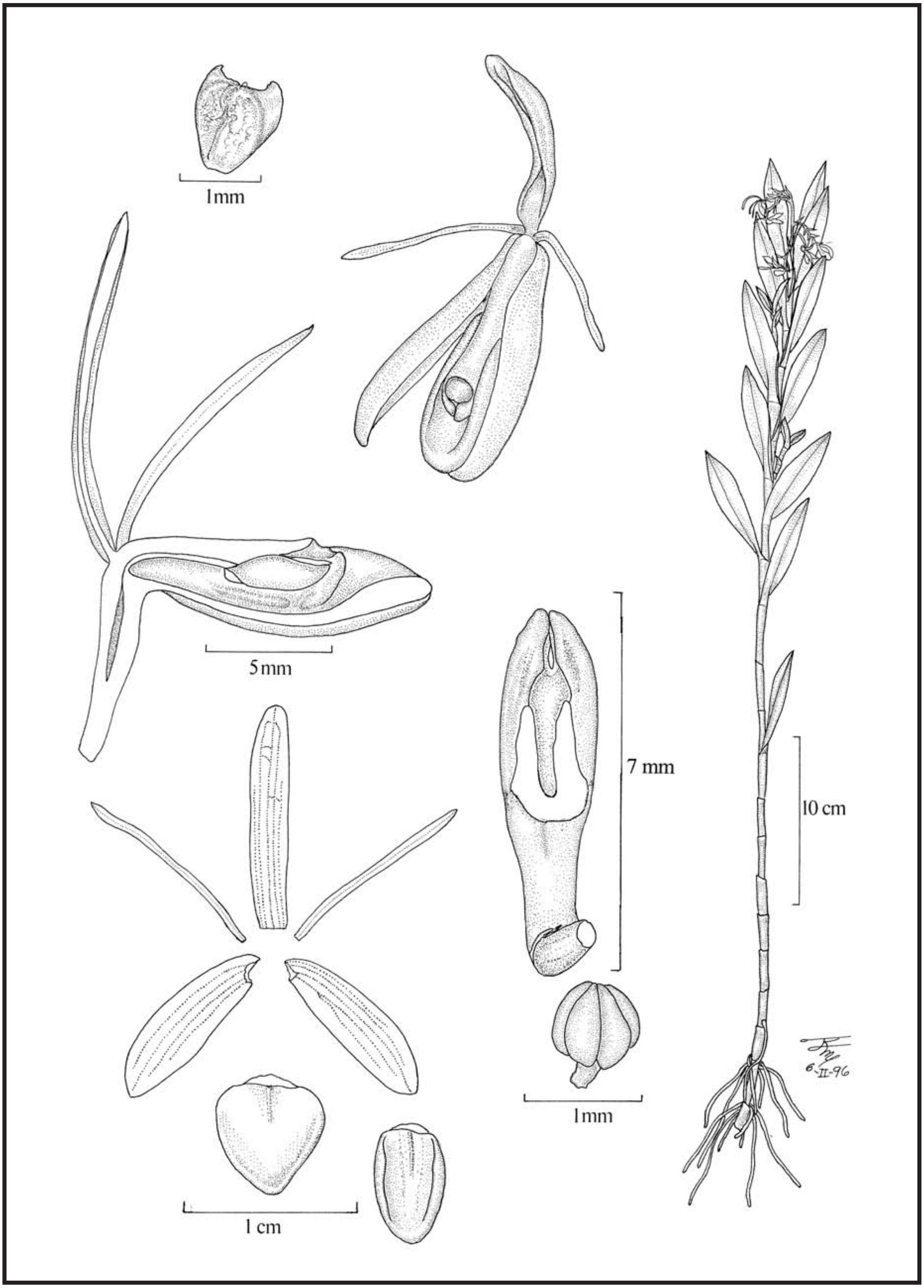
RECOGNITION: *Epidendrum morilloi* belongs to the Alpicolum Group and Subgroup which is characterized by the simple, cane-like stems, long, narrow 1-3 spathaceous bracts, fox-tail-like inflorescence and numerous flowers with fleshy lip. This species is distinguished by the arching-nutant stems, the paniculate inflorescence (though the branches are short and few), the creamy white sepals and petals, with a snow-white lip and column, the flowers comparatively smaller, sepals 8.5-10 mm long. *Epidendrum kltozscheanum* has erect and straight stems, a racemose inflorescence, the inflorescence more compact, with many more flowers, the margin of the lateral lobes of the lip minutely erose, and fuchsia to yellowish tinged with pink flowers, sepals 14 mm long. *Epidendrum sisgaënse* Hágsater, from north of Bogotá is somewhat similar, but the flowers are larger, sepals 19-20 mm long, green to brownish-green tinged reddish, the inflorescence arching, few-flowered, and the 3-lobed lip has a slightly erose margin, with the mid-lobe rectangular, somewhat wider than long. *Epidendrum charpinii* Hágsater & E.Santiago has a racemose inflorescence, ochre-colored flowers, the lip somewhat paler, with the mid-lobe of the lip somewhat apically rhombic, widened near the acute apex, sepals erect and spreading.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Dr. Gilberto N. Morillo (b. 1944) of Mérida, Venezuela, who collected, cultivated and photographed the pretype and brought it to our attention. He is an expert in Asclepiadaceae, Apocynaceae, Andean Asteraceae, Orchidaceae, and the flora of the páramos of Venezuela, at the Universidad de los Andes.

Authors: E. Hágsater & E. Santiago **Illustrator: E. R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM NEUDECKERI Dodson & Hágsater **Plate 1360**

EPIDENDRUM NEUDECKERI Dodson & Hágsater, Orquideología 19(2): 145. 1994.

Type: ECUADOR: Esmeraldas: Lita to San Lorenzo, km 18, 850 m, 28 December 1990, ***Calaway H. Dodson, Tilmann Neudecker, Volles & Herzum 18587.*** Holotype: MO! (Illustration voucher).

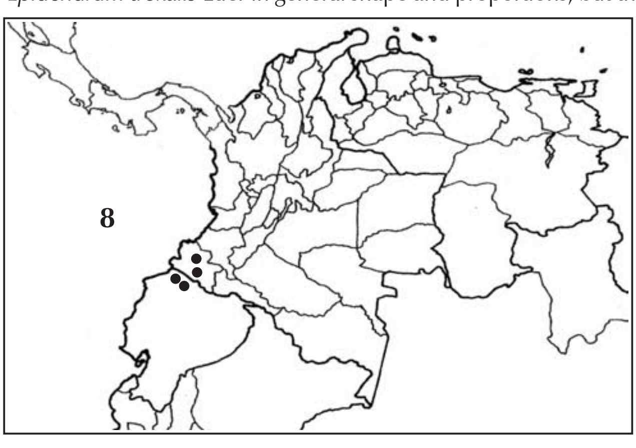
Hierba terrestre o epífita, monopodial, ramificada hacia el ápice, 17-100 cm de alto. **Raíces** de la región basal del tallo principal, 1.0-1.5 mm de grosor. **Tallo** tipo caña, erecto, terete, produciendo ramificaciones cortas del tercio apical cuando maduro, el principal 12-50 x 0.2-0.45 cm, las ramificaciones más cortas, 6-12 cm de largo. **Hojas** numerosas en el tallo principal, pocas en las ramas, distribuidas todo a lo largo de los tallos, dísticas, erecto extendidas, orientadas al mismo lado del tallo; vaina tubular, hasta 2.5 cm de largo; lámina angostamente elíptica, ligeramente oblicua, ápice agudo, margen entero, extendido, 2.5-9.0 x 0.9-2 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, del tallo principal y de las ramificaciones, paniculada, 7 cm de largo; generalmente con 2-3 racimos simultáneos, florece una sola vez, pedúnculo terete, delgado, de unos 2.0-2.5 cm de largo hasta el primer racimo o bráctea intermedia si solo hay un racimo presente, distancia entre racimos 2.0-2.5 cm. **Brácteas florales** triangulares, agudas, de la mitad hasta tan largas como el ovario, 3-8 mm de largo. **Flores** 9-16 por racimo, más o menos sucesivas, unas 2 abiertas a la vez, el labelo siempre orientado hacia la raquis, de color verde amarillento, ápice de columna blanca. **Ovario** terete, corto, delgado, no inflado, 5-10 mm de largo. **Sépalo dorsal** extendido, libre, linear ligulado, ápice redondeado, 5-nervado, margen entero, 13 x 2 mm; **Sépalos laterales** entreabiertos, libres, subparalelos a la columna, angostamente oblongos, obtuso redondeados, algo falcados, 4-nervados, carnosos, cóncavos, 10.5 x 3.3 mm. **Pétalos** entreabiertos, libres, filiformes, agudos, uninervados, 12 x 0.6 mm. **Labelo** unido a la columna, triangular ovado al extenderse, los ángulos redondeados, carnoso, ecalloso, en forma de media caña y abrazando la columna en posición natural, margen entero, 8 x 8 mm. **Columna** formando un ángulo recto con el ovario, terminada en dos lobos redondeados y vueltos hacia arriba; 8 mm de largo. **Clinandrio** reducido, entero. **Antera** ovoide, la superficie frontal rugosa, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas granulosas, un poco más largas que los polinios; viscidio semilíquido. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** cortos, cerca de 1/4 del largo de la cavidad estigmática. **Nectario** poco profundo, sin traspasar el perianto, ornamentado con una quilla longitudinal frente a la cavidad estigmática. **Cápsula** no vista.

Terrestrial or epiphytic, monopodial, **herb**; branching above. **Roots** fleshy, from the basal region of the main stem. **Stems** cane-like, terete, branching from the apical third when mature. **Leaves** many on the main stem, few on the branches, distributed throughout, distichous, facing the same side of the stem; sheaths tubular; blades erect-spreading, sub-coriaceous, narrowly elliptic, somewhat oblique, acute, margin entire, spreading. **Inflorescence** apical, from the main stem and the branches, without spathes, paniculate, usually with 2-3 racemes separated by the very thin peduncle, flowers only once. **Floral bracts** triangular, half to as long as the ovary. **Flowers** 9-16 per raceme, successive, 2 open at one time, the lip always oriented towards rachis, the yellow-green, apex of the column white. **Ovary** terete, not inflated. **Sepals** free, margin entire, 4-veined, dorsal sepal linear-elliptic, rounded; lateral sepals narrowly oblong, obtuse-rounded, somewhat falcate, obtuse. **Petals** filiform, acute, 1-veined. **Lip** united to the column, ovate-triangular, the corners rounded, ecallose, embracing the column in natural position, margin entire. **Column** forming a right angle with the ovary, straight, ending in a pair of rounded, upturned lobes. **Clinandrium-hood** reduced, entire. **Anther** ovoid, 4-celled. **Pollinia** 4, obliquely obovoid, laterally compressed, caudicles soft and granular, slightly longer; viscidium semi-liquid. **Nectary** shallow, without penetrating the ovary, ornamented with a longitudinal keel in front of the stigmatic cavity. **Rostellum** apical, slit.

OTHER SPECIMENS: COLOMBIA: Nariño: Altaquer, 3500 ft, 10 XI 1946, *Foster 2085*, AMES! COL! Pilcuán, *Lehmann* sub *Bentham Trustees 46*, AMES! NY! US! W-R! **ECUADOR: Esmeraldas:** Lita to San Lorenzo, km 40, 220 m, 10 IX 1991, *Hirtz 5615*, MO!

DISTRIBUTION AND ECOLOGY: Known only from the border between Ecuador and Colombia, along the lower Pacific slope of the Andes, in very wet lowland rainforest, 200-1050 m altitude. Flowering September to December.

RECOGNITION: *Epidendrum neudeckeri* belongs to the Piperinum Group which is recognized by the monopodial, short, banching habit, filiform petals, and entire, ecallose lip. The species is recognized by the terrestrial or epiphytic, monopodial habit with erect terete stems, numerous somewhat oblique leaves, the stem producing several branches along the upper 1/3 when mature, flowering once from the apex with a paniculate inflorescence formed usually by 2-3 racemes of successive flowers on a very thin peduncle appears to be enough to identify the species. The flowers appear to be very similar to *Epidendrum troxalis* Luer in general shape and proportions, but the latter species produces flowers singly from the axil of the leaf-sheaths. *Epidendrum piperinum* Lindl. has small, pendent plants, ovate-oblong, succulent leaves, the lateral sepals parallel to the column, 8-9 mm long, petals erect, parallel to the dorsal sepal.

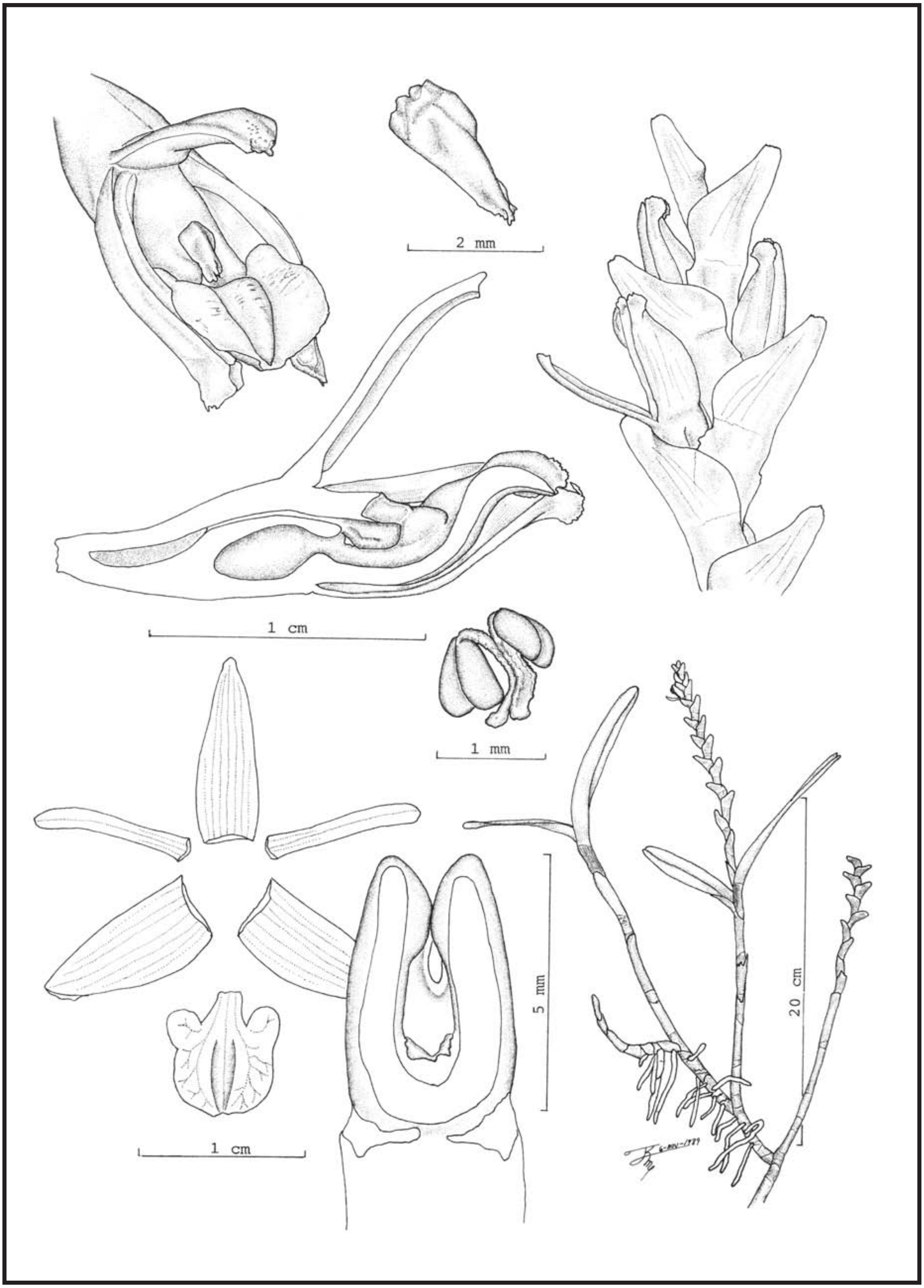


NOTES: The pressed stems are somewhat reminiscent of the genus *Sertifera*, but that genus has lateral inflorescences. The Lehmann collection from Colombia has been identified as *Tropidia* and *Diothonea lehmanniana* Kraenzl. which was transferred to *Sertifera lehmanniana* (Kraenzl.) Garay.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Tilmann Neudecker, German orchid enthusiast from Würzberg, who participated in the collection of the type.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM NITENS Rchb.f. **Plate 1361**

EPIDENDRUM NITENS Rchb.f., Beitr. Orch. Centr.-Am. 82-83. 1866.

Type: GUATEMALA: Las Nubes, 17 January 1857, ***Wendland 324***. Holotype W-R!

Synonym: *Epidendrum Johannis* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 16: 444. 1920. Type: GUATEMALA: Baja Verapaz, Panzal, X 1912, ***Türckheim 3889.*** Holotype: B (destroyed). Lectotype (here designated): copy of illustration of type made under the supervision of R. Schlechter of type: AMES!

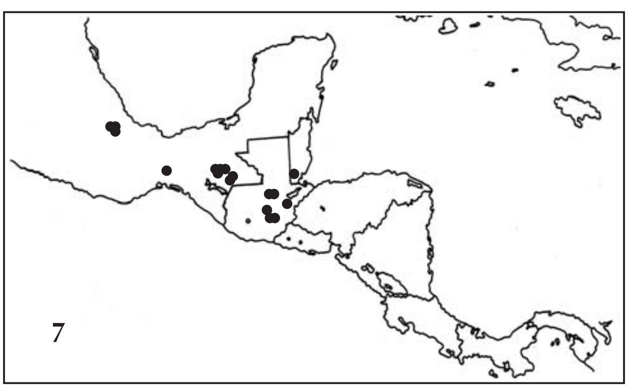
Hierba epífita, de simpodio rastrero o escandente, 15-35 cm de alto incluyendo la inflorescencia. **Rizoma** alargado, 3-4 cm de largo, 5-7 mm de grosor. **Raíces** basales, de los 4-5 nudos basales, carnosas, delgadas, 1-2 mm de grosor. **Tallos** sencillos, los nuevos se originan del 5°-6° entrenudo del tallo anterior, tipo caña, lateralmente comprimidos hacia el ápice, rectos, 7-18 x 0.3-0.7 cm. **Hojas** 2-3, distribuidas hacia la parte apical del tallo; vaina tubular, lateralmente comprimida, lisa, 1.5-4.8 x 0.7-1.0 cm; lámina foliar articulada, angostamente elíptica a linear elíptica, ápice desigualmente bilobado, subcoriácea, lisa, margen entero, verde; 7-13 x 1.1-2.2 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, del tallo maduro, florece una sola vez, dística, suberecta, [7]15-20 cm de largo; pedúnculo y raquis lateralmente comprimidos, ancipitosos, no ornamentados, sinuosos; el pedúnculo 4-6 cm de largo, con 1-2 brácteas, conduplicadas, raquis en zigzag, 17-20 x 6-9 mm. **Brácteas florales** desiguales, más largas que el ovario, progresivamente más cortas, ligeramente incurvadas, ampliamente ovadas, conduplicadas, redondeadas, diminutamente dentadas en el ápice, con quilla prominente que se continua con el raquis, casi perpendiculares al raquis, no imbricadas, 10-18 x 5-11 mm (sin extender). **Flores** 5-12, sucesivas, 4-7 abiertas a la vez, en diferentes estados de desarrollo en un momento dado, concoloras, verdes. **Ovario** inflado hacia el ápice detrás del perianto, terete, no ornamentado, 7-9 mm de largo. **Sépalos** entreabiertos, libres, glabros, coriáceas, ovados, agudos, 5 nervados, margen extendido; el dorsal con una quilla en el ápice, con margen diminutamente dentado; los laterales con una quilla dorsal apical, prominente, en ocasiones diminutamente dentada, 9-13 x 2.5-5 mm. **Pétalos** entreabiertos, lineares, ligeramente falcados, dilatados en la base, redondeados a obtusos, margen extendido, finamente dentado hacia el ápice, suculentos, 3 nervados, 10-13 x 0.5-1 mm. **Labelo** unido a la columna, entero, pandurado, profundamente cordado en la base, ápice redondeado, obtuso a ligeramente emarginado y en ocasiones con un mucrón, margen entero, 5-8 x 5-7 mm; ecalloso, carina central roma ensanchada hacia el ápice. **Columna** recta, gruesa, terminada en un lóbulo redondeado y amplio a cada lado, 6-7 mm de largo. **Clinandrio** reducido, entero. **Antera** ovoide, terminada en un proceso alargado, semicónica, angosta, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, del doble de largo de los polinios; viscidio semilíquido, transparente. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** de 1/4 del largo de la cavidad estigmática. **Nectario** penetrando algo más de la mitad del ovario, estrecho en la base de la columna, expandido en el ovario, liso interiormente. **Cápsula** no vista.

Epiphytic, sympodial, creeping or scandent **herb**. **Roots** from the basal rhizome, fleshy, thin. **Stems** erect, simple, cane-like, laterally compressed towards the apex. **Leaves** 2-3, distributed towards the apical half of the stem; sheath tubular, laterally compressed, smooth; blade articulate, narrowly elliptic to linear-elliptic, apex unequally bilobed, sub-coriaceous, smooth, margin entire. **Inflorescence** apical, racemose, distichous, sub-erect, flowering only once from the mature stem; peduncle and rachis sinuous, laterally compressed, ancipitose, with 1-2 conduplicate bracts. **Floral bracts** nearly perpendicular to the rachis, ovate, rounded, conduplicate, longer than the ovary, progressively shorter. **Flowers** 5-12, successive, 4-7 open at one time, concolor, green. **Ovary** inflated towards the apex, behind the perianth, terete. **Sepals** partly spreading, free, glabrous, ovate, acute, coriaceous, 5-veined, with a prominent apical dorsal keel in the laterals. **Petals** partly spreading, linear, dilated at the base, rounded to obtuse, succulent, 3-veined. **Lip** entire, pandurate, deeply cordate at he base, apex rounded, obtuse to slightly emarginate; ecallose, with a low, rounded, central keel widened towards the apex. **Column** straight, thick, terminating in a prominent rounded lobe on each side. **Clinandrium-hood** reduced, entire. **Anther** ovoid, terminating in a elongate semiconical, narrow process, 4-celled. **Pollinia** 4, obovoid, laterally compressed, sub-equal; caudicles soft and granulose, twice as long as the pollinia; viscidium semi-liquid, transparent. **Rostellum** sub-apical, slit. **Nectary** penetrating half the ovary, narrowed at the base of the column and then expanded within the ovary.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Ranging along the Atlantic slope in Mexico (Veracruz, Oaxaca and Chiapas), Guatemala and Belize, in epiphyte in cloud forest, wet pine-oak forest and humid rainforest, epiphytic at 800-1320 m. Flowering from May through January, especially in November and December.

RECOGNITION: *Epidendrum nitens* belongs to the Spathiger group which is recognized by sympodial plants and distichous inflorescence, and the Rigidum subgroup which is characterized by the distichous inflorescence and non-secund, mostly small flowers. The species has a short straggling habit, the conduplicate floral bracts relatively short and spreading, triangular, rounded, the floral segments partly spreading, sepals 9-13 mm long, and the pandurate lip. *Epidendrum mocinoi* Hágsater is very similar but larger, and found on the Pacific slope of southern Mexico at high altitudes, has 4-6 leaves, the sepals usually 14-19 mm long. *Epidendrum cardiophorum* Schltr. has smaller plants, an erect inflorescence with simultaneous flowers, the lip entire, sub-quadrate or cordiform, and the clinandrium-hood entire; this species is widespread from Mexico to Panama. *Epidendrum rigidum* Jacq. ranging from Florida, throughout the Antilles and into South America as far as Argentina, also has a usually arching inflorescence, smaller floral bracts, with the lip entire and the clinandrium-hood deeply dentate.

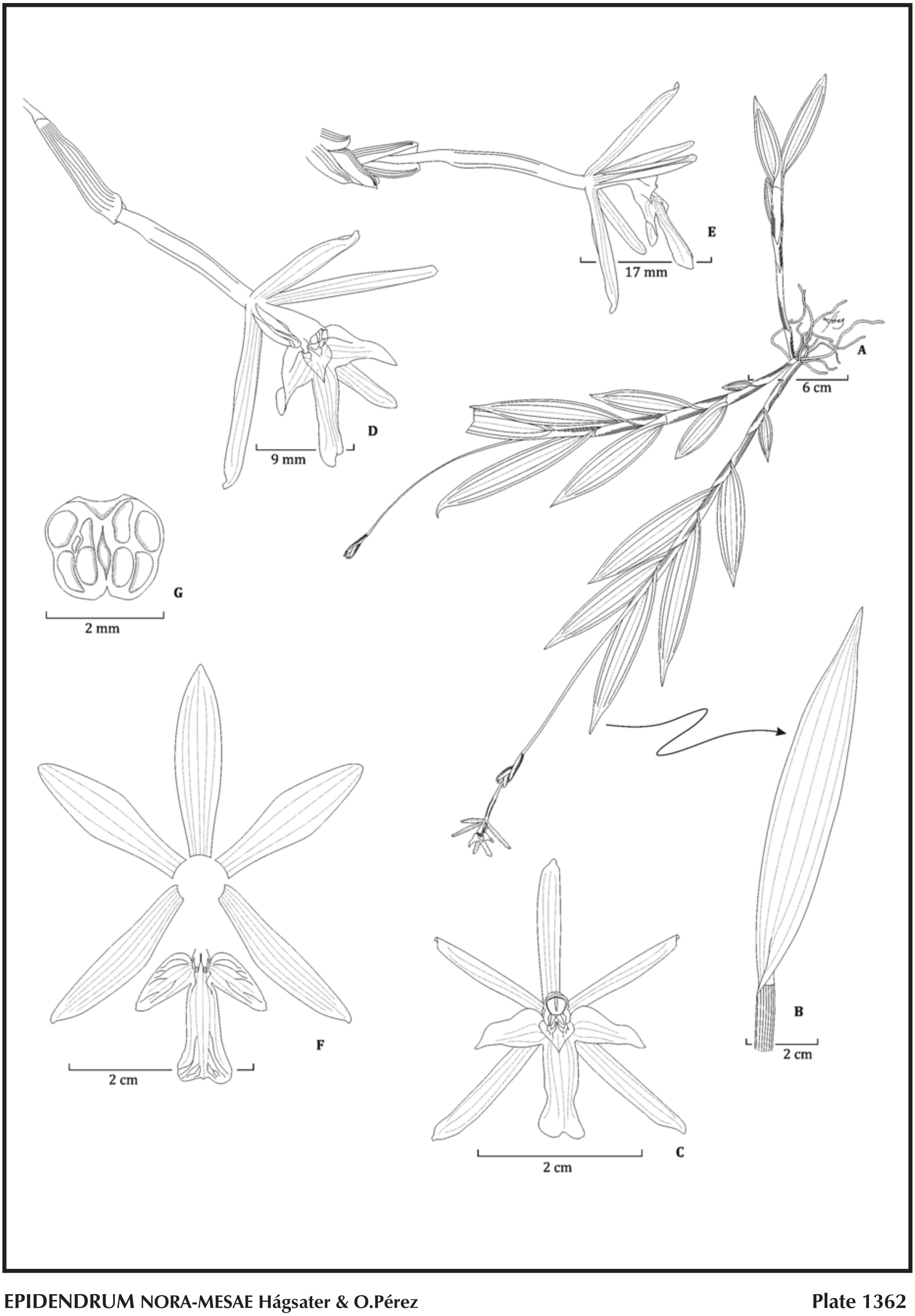


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CONSERVATION STATUS: NT. Not threatened. Populations of *E. nitens* are abundant and form large masses where they are found; many have, however, been lost or reduced due to habitat loss, especially for coffee plantations, in particular in Veracruz and Chiapas.

ETYMOLOGY: From the Latin *nitens*, brilliant, glossy, in reference to the brilliant leaves of the species.

Authors: R. Jiménez M. & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM **NORA-MESAE Hágsater & O.Pérez** **Plate 1362**

EPIDENDRUM NORA-MESAE Hágsater *et* O.Pérez, *sp. nov.*

Type: COLOMBIA: Valle del Cauca: Mpio. de Yumbo; Dapa, 2000 m, aprox. 20°C, 16 Mayo 2010, ***Oscar A. Pérez E. & Edicson Parra 773***. Holotype: VALLE! (Illustration voucher).

Epidendro convergente Garay & Dunsterville simile sed floribus majoribus, labelli lobulis lateralibus semiovatis obtusis, lobulo medio obcuneato quam lobuli laterales longiore.

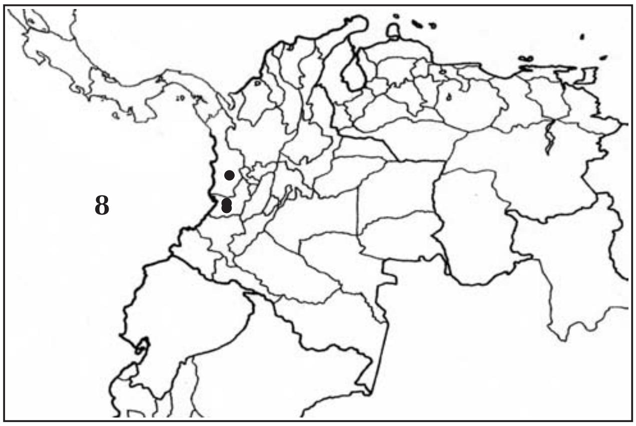
Hierba epífita, simpodial, cespitosa, erecta a arqueado-colgante, 23.2-37.2 cm de alto. **Raíces** basales, carnosas, delgadas, de ca. 0.5-2 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente aplanados, ancipitosos, erectos cuando jóvenes y arqueado colgantes al madurar, rectos, 10.6-16.9 x 0.3-0.8 cm. **Hojas** 5-7, distribuidas a lo largo del tallo, alternas, articuladas, suberectas, progresivamente más grandes, subcoriáceas; vainas tubulares, lateralmente aplanadas, ancipitosas, finamente estriadas, 1-3 x 0.3-0.5 [0.8] cm; lámina lanceolada, acuminada, margen entero, extendido, 2-12 x 0.4-2.4 cm. **Bráctea espatácea** 1, ubicada en el ápice del pedúnculo, lanceolada, aguda a cortamente acuminada, tubular en la base y conduplicada en la mitad apical, ancipitosa, las bracteas florales basales imbricadas y producidas dentro de la bráctea espatácea, 1.8-2.1 x 0.3 cm. **Inflorescencia** apical, racemosa en la primera floración, muy probablemente originando nuevos racimos a lo largo de varias temporadas y entonces pluriracemosa, dística, pauciflora, visiblemente más larga que la hoja apical, 14-19 cm de largo; pedúnculo alargado, lateralmente aplanado, ancipitoso, bialado, las alas prominentes hacia la base, progresivamente más angostas hacia el ápice, 12-17 cm de largo; raquis corto, totalmente oculto por las brácteas florales. **Brácteas florales** mucho más cortas que el ovario, angostamente elípticas, obtusas, conduplicadas, imbricadas, persistentes en el raquis aún después de la floración, 10-12 x 3-5.5 mm. **Ovario** terete, delgado, muy ligeramente inflado ventralmente en los 2/3 apicales, no ornamentado, 26-30 mm de largo. **Flores** [3] varias, sucesivas, se produce una a la vez, resupinadas, de color verde, en ocasiones ligeramente teñidas de pardo, el disco del labelo algo mas blanco, antera color crema; sin datos de fragancia. **Sépalos** entreabiertos, libres, oblanceolados, angostos cerca de la base, obtusos, diminutamente apiculados, 5-nervados, margen entero, revoluto, 14-21 x 3.5-4.2 mm; los **laterales** ligeramente oblicuos. **Pétalos** entreabiertos, libres, linear oblanceolados, algo más amplios y oblicuos en el ápice, redondeados, diminutamente apiculados, 3-nervados, con las nervaduras laterales ramificadas dando la impresión de ser 5-nervados, margen entero, revoluto, 14-21 x 3.5-5 mm. **Labelo** unido a la columna, trilobado, base cordada, margen entero, extendido, 10-15 x 12-15 mm; bicalloso, los callos laminares, algo lateralmente aplanados; disco sin carinas obvias; lóbulos laterales oblicuamente ovados, apicalmente obtusos, 7-8.5 x 4-5 mm; lóbulo medio obcuneado, apicalmente algo emarginado con un apículo diminuto en el seno, 9-12 x 5.5-6 mm. **Columna** recta, delgada, algo dilatada hacia el ápice, 7-8 mm de largo. **Clinandrio** prominente, (sobrepasando levemente el cuerpo de la columna), margen entero. **Antera** reniforme, 8-locular. **Polinios** 8, los cuatro inferiores más pequeños. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** no visto. **Cápsula** elipsoide, 3.5 x 1.3 cm; pedicelo terete, delgado, 7 mm de largo; cuerpo 2 x 1.3 cm; cuello apical 7 mm de largo.

Epiphytic, caespitose, sympodial, erect to arching-pendent **herb. Roots** basal, fleshy, thin. **Stems** simple, cane-like, laterally compressed, ancipitose, erect when young, arching pendent with age, straight, short. **Leaves** 5-7, distributed throughout the stem, alternate, articulate, sub erect, progressively longer, sub-coriaceous; sheaths tubular, laterally compressed, ancipitose, minutely striated; blade lanceolate, acuminate, margin entire, spreading. **Spathaceous bract** single, at the apex of the peduncle, lanceolate, acute to short acuminate, tubular at the base, conduplicate along the upper half, ancipitose, about twice the size of the floral bracts, the floral bracts produced within and imbricating. **Inflorescence** apical, racemose at first flowering, probably producing new racemes with time, and the pluriracemose, distichous, few-flowered, visibly longer than the apical leaf; peduncle elongate, laterally compressed, ancipitose, two-winged, the wings prominent towards the base, progressively narrower; rachis short, totally hidden by the floral bracts. **Floral bracts** much shorter than the ovary, narrowly elliptic, obtuse, conduplicate, imbricating, persistent even after flowering. **Ovary** terete, thin, very slightly inflated ventrally along the apical 2/3, unornamented. **Flowers** [3] several, produced singly in succession, resupinate, green slightly tinged with brown, the disc of the lip lighter, nearly white, anther cream-colored. **Sepals** partly spreading, free, oblanceolate, narrowed near the base, obtuse, minutely apiculate, 5-veined, margin entire, revolute; the lateral sepals somewhat oblique. **Petals** partly spreading, free, linear-oblanceolate, somewhat wider and oblique towards the apex, rounded, 3-veined, margin entire, revolute. **Lip** united to the column, 3-lobed, the base cordate, margin entire, spreading; bicallose, the calli laminar, somewhat laterally flattened; disc apparently without keels; lateral lobes obliquely ovate, obtuse, mid-lobe obcuneate, apically somewhat emarginate, with a minute apicule in the sinus. **Column** straight, thin, somewhat dilated towards the apex. **Clinandrium-hood** prominent, slightly surpassing the body of the column, margin entire. **Rostellum** sub–apical, slit. **Anther** reniform, 8-celled. **Pollinia** 8, the lower 4 smaller. **Capsule** ellipsoid; pedicel terete, thin; body somewhat more than half the entire length, in the middle; apical thin.

OTHER RECORDS: COLOMBIA: *Epidendrum* indet. 103 [CUV] (Ortiz, 2007). **Valle del Cauca**: Reserva Natural y Jardín Botánico "El Refugio", km 23 vial al Mar, Cali-Buenaventura, 2100 m, photo as *Epidendrum convergens,* www.flickr.com/photos/native_colombian_orchids/ 21 VII 2007, *Alejo Calderón*, digital image, AMO!

DISTRIBUTION AND ECOLOGY: Known only from the forested summit of the Cordillera Occidental in the Valle del Cauca, Colombia, epiphytic in cloud forest at 1800-2260 m altitude. Flowering throughout the year.

RECOGNITION: *Epidendrum nora-mesae* belongs to the Albertii Group which is characterized by the sympodial habit, laterally compressed to ancipitose or somewhat fusiform-thickened stems, the apical or apical and lateral racemose, distichous inflorescence more or less with imbricating bracts on the peduncle, producing one flower at a time, and the Allenii Subgroup which is characterized by the stems with numerous leaves, the apical inflorescence (rarely lateral), peduncle elongate, bare, non-bract bearing, two-winged, the rachis short, covered by rounded, usually imbricating, bracts, and the Convergens Complex which has a 3-lobed lip and 8 pollinia. The species is recognized by the plants up to 37.2 cm tall (including the inflorescence), lanceolate leaves 2-12 x 0.4-2.4 cm, the inflorescence visibly longer than the apical leaf, sepals 14-21 mm long, the deeply 3-lobed lip, the mid–lobe obcuneate, and the lateral lobes semi-ovate, apically obtuse. It is somewhat similar to *Epidendrum convergens* Garay & Dunsterville, which has smaller flowers, sepals 8.5 mm long, and the lateral lobes of the lip triangular and acuminate, raising in natural position and nearly as long as the mid–lobe. *Epidendrum churunense* Garay & Dunsterville has only 4 pollinia, smaller flowers (sepals 8-9 mm long), the column very short and thickened, 2 mm long, and the base of the peduncle on the inflorescence is covered by some 6 imbricating bracts. *Epidendrum peristerium* Hágsater & E.Santiago has somewhat smaller flowers (sepals 11 mm long), greenish-white, the lip white, in general outline reminiscent of a dove in flight, with the mid-lobe sub-quadrate.



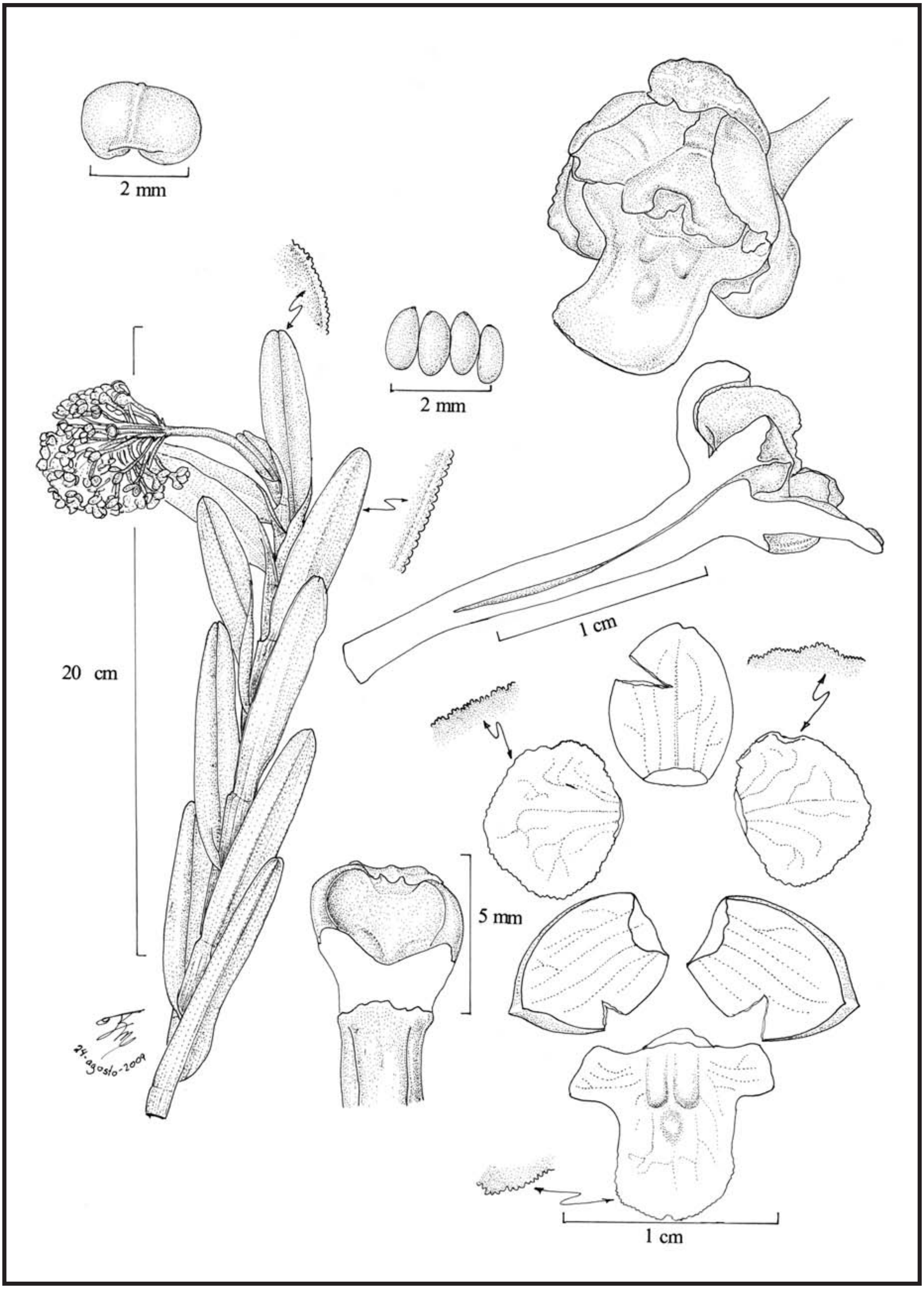
NOTE: This complex of three species which includes *Epidendrum convergens*, *E. nora-mesae*, and *E. peristerium*, is unusual in the genus in having 8 pollinia, where most species in *Epidendrum* have only 4, and a small number of species in various groups only have 2.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Dr. Nora Mesa, professor of entomology at the Universidad Nacional de Colombia of the Valle del Cauca, and mentor of the junior author.

REFERENCE: Ortiz V., Pedro & Carlos Uribe V., 2007, **Galería de Orquídeas de Colombia**, CD, Da Vinci Editores, Bogotá, Colombia.

Authors: E. Hágsater & O. Pérez **Illustrator: O. Pérez** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM OCCIDENTALIS (Christenson) Hágsater & E.Santiago Plate 1363

EPIDENDRUM OCCIDENTALIS (Christenson) Hágsater *et* E.Santiago, *stat. et comb. nov.*

Basionym: *Epidendrum hemiscleria* Rchb. f. subsp. *occidentalis* Christenson, Orchid Rev. 113: 1265. 2005. Type: ECUADOR: Loja: Jimbura to Zumba, 3300 m, ***S. Dalström 635.*** Holotype: SEL.

Hierba epífita, simpodial, cespitosa, arqueado-pendente, de 70-100 cm de alto. **Raíces** basales, carnosas, gruesas, blancas, 3-4 mm de grosor. **Tallos** sencillos, tipo caña, teretes, arqueado pendentes, 66-90 x 0.3-0.7 cm; cubiertos en la base por vainas tubulares no foliares, escariosas y fibrosas con el tiempo, 3.5-4.5 cm de largo. **Hojas** 10-18, distribuidas a lo largo de los dos tercios apicales del tallo, alternas, articuladas, suberectas, coriáceas, rígidas, desiguales en tamaño (tanto la basal como la apical más pequeñas); vaina tubular, finamente estriada, 2-3.3 x 0.3-0.5 cm; lámina oblongo lanceolada, ápice redondeado, diminutamente apiculado, margen crenulado, 6.5-13 x 0.5-1.2 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, subglobosa, densa, erecta a raramente arqueada, producida en un fascículo alrededor del raquis, 10 cm de largo; pedúnculo terete, grueso, recto, erecto a arqueado, de color rojo brillante, 7 cm de largo; provisto en la parte media de una bráctea pequeña, anchamente triangular, acuminada, 4-5 mm de largo; raquis engrosado, 3 cm de largo. **Brácteas florales** muy pequeñas, anchamente triangulares, agudas, abrazadoras, ca. 2 mm de largo. **Flores** 30-40, resupinadas, simultáneas, muy carnosas, de consistencia rígida, dura, de color amarillo brillante a naranjas; sin datos de fragancia. **Ovario** terete, grueso, no inflado, estriado, de color amarillo verdoso, 18-23 mm de largo. **Sépalos** entreabiertos, libres, elípticos, redondeados, 5-nervados, cóncavos, dorsalmente rugosos hacia el ápice, margen entero, 7-7.5 x 5-5.8 mm; los **laterales** diminutamente apiculados. **Pétalos** entreabiertos, libres, anchamente ovado orbiculares, redondeados en el ápice, margen diminutamente eroso, extendido, 6.5-7 x 7-7.2 mm. **Labelo** unido muy en la base de la columna, trilobado, truncado en la base, 8 x 9.5 mm; ecalloso, con un par de quillas bajas, anchas, paralelas, oblongo rectangulares y muy cortas; el disco con una carnosidad circular ubicada justo al frente de las quillas; lóbulos laterales extendidos, pequeños, subcuadrados, truncados, margen entero, 2.3 x 2.3 mm; lóbulo medio más grande, subcuadrado, ápice truncado, no emarginado, con el margen diminutamente eroso, 5.3 x 5.3 mm. **Columna** muy corta, recta, gruesa, 3.5 mm de largo. **Clinandrio** corto, margen entero. **Antera** reniforme, 4-locular. **Polinios** 4, ovoides; caudiculas no vistas. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** obsoleto. **Cápsula** no vista.

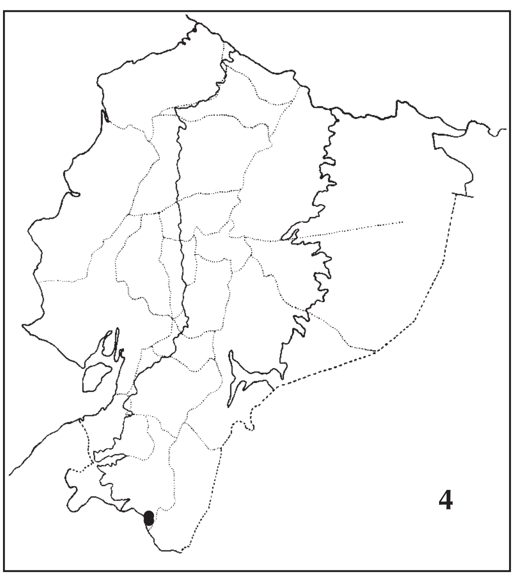
Epiphytic, sympodial, caespitose, arching-pendent **herb. Roots** basal, fleshy, thick, white. **Stems** simple, cane-like, terete, arching-pendent; the base covered by non-foliar, scarious tubular sheaths, becoming fibrous with time. **Leaves** 10-18, distributed throughout the apical 2/3 of the stem, alternate, articulate, sub-erect, coriaceous, rigid, unequal in size (the basal and apical leaves shorter); sheath tubular, minutely striated; blade oblong-lanceolate, apex rounded, minutely apiculate, margin crenulate. **Spathaceous bracts** lacking. **Inflorescence** apical, racemose, sub-globose, dense, erect to rarely arching, produced in a fascicle around the thickened rachis; peduncle teete, thick, straight, erect to arching, bright red with a single, small, widely triangular, acuminate bract at the middle of the peduncle, 4-5 mm long; rachis thickened. **Floral bracts** very small, widely triangular, acute, amplexicaul. **Flowers** 30-40, resupinate, simultaneous, very fleshy, the segments rigid, hard, brilliant yellow to orange. **Ovary** terete, thick, not inflated, striated, greenish yellow. **Sepals** partly spreading, free, elliptic, rounded, 5-veined, concave, dorsally rugose towards the apex, margin entire; lateral sepals minutely apiculate. **Petals** partly spreading, free, widely ovate-orbicular, apex rounded, margin minutely erose, spreading. **Lip** united at the very base to the column, 3-lobed, base truncate; ecallose, the disc with a pair of low, wide, rounded, parallel, oblong-rectangular keels, with a circular, fleshy hump in front of the keels; lateral lobes spreading, small, sub-quadrate, truncate, margin entire; mid-lobe larger, sub-quadrate, apex truncate, not emarginate, the margin minutely erose. **Column** very short, straight, thick. **Clinandrium-hood** short, margin entire. **Anther** reniform, 4-celled. **Pollinia** 4, obovid. **Rostellum** apical, slit. **Nectary** very short, obsolete, without reaching the base of the perianth.

OTHER SPECIMENS: ECUADOR: Loja: between Jimbura and Zumba, 3300 m, 21 II 1986, *Hirtz 2866*, MO! QCA! QCNE! Amaluza-Jimbura-Zumba, 3420 m, 23 XI 1994, *Jøergensen 802*, AMO! (Illustration voucher). LOJA! QCA!

OTHER RECORDS: ECUADOR: Loja: Illustration, Icon. Pl. Trop. ser II, 5: 471. 1989, based on *Dalström 635.* Digital image of live inflorescence, *Hirtz 2866*, AMO!

DISTRIBUTION AND ECOLOGY: Known only from the southern tip of Ecuador, at 3300-3400 m altitude. Flowering November to February.

RECOGNITION: *Epidendrum occidentalis* belongs to the Hemiscleria Group which is characterized by the caespitose habit, simple stems, with numerous (oblong-lanceolate) leaves sub-parallel to the stem, an apical inflorescence with a strong peduncle and very thick rachis with, racemose, sub-globose, dense, produced in a fascicle around the rachis, flowers fleshy, hard, bright orange-yellow. The species is recognized by the arching-pendent stems, the inflorescence generally erect, the peduncle bare, without spathaceous bracts, is brilliant red, lateral sepals elliptic, 7.5 mm long, the mid-lobe of the lip entire, not apically emarginate, the lateral lobes sub-quadrate, and the disc of the lip has only 2 wide, short, and low, oblong-rectangular keels at the base of the lip with a circular, fleshy hump in front of the keels. *Epidendrum hemiscleria* Rchb.f. has erect stems, the peduncle of the inflorescence dark purple, with a pair of short, tubular, spathaceous bracts at the base; the lateral sepals widely triangular, 5-6.7 mm long, the disc of the lip with 3 narrow, parallel keels, and the lateral lobes sub-orbicular, the apex short-emarginate. Christenson described the subspecies as having larger plants, with the inflorescence erect, however, we have found that both species are variable in these features.



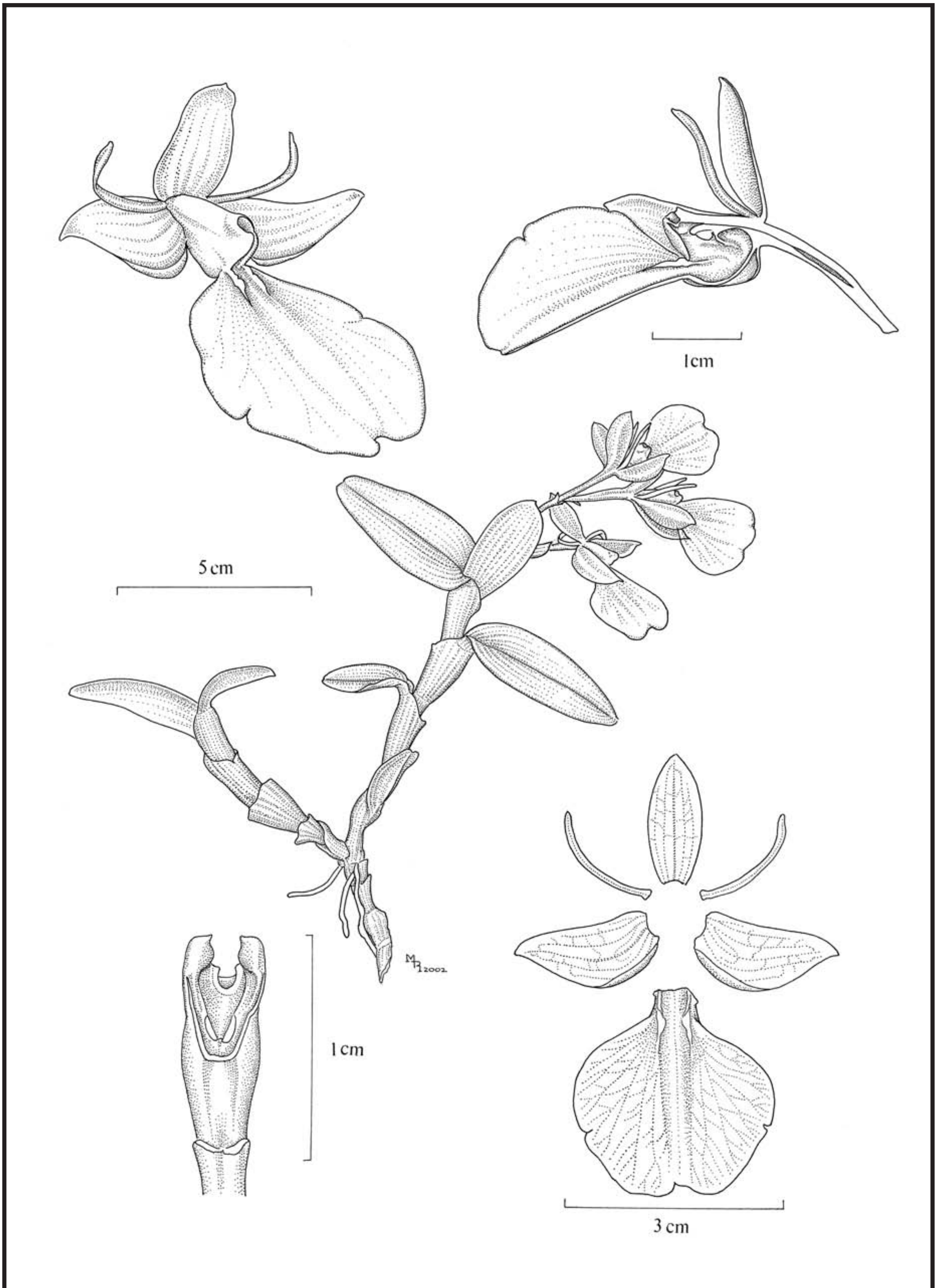
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CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *occidentalis*, the west, where the sun goes down, in reference to the relative westerly range of the species in southern Ecuador, in comparison to *E. hemiscleria* which is found mostly east of Marañón river in Peru, but also west of it, directly south of the range in Ecuador.

REFERENCE: Dodson, C. H., & P. M. Dodson, 1989, published as *Epidendrum hemiscleria* Rchb.f. in **Icon. Pl. Trop.** ser. II, 5: pl. 471.

Authors: E. Hágsater & E. Santiago **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM ORBICULATUM C.Schweinf. **Plate 1364**

EPIDENDRUM ORBICULATUM C.Schweinf., Bot. Mus. Leafl. 11: 104. 1943.

Type: PERU: Cuzco; Calca, Lares Valley above Mantoc, 2400-2500 m, 8 March 1929, ***A. Weberbauer 7904***. Holotype: F! Isotypes: AMES! NY! US! (Illustration voucher). W-R!

Hierba litófita, simpodial, con rizomas cortamente rastreros, no ramificada, hasta 15 cm de alto. **Raíces** basales, carnosas, delgadas, blancas, escasas, 1-2 mm de grosor. **Tallo** sencillo, tipo caña, producido cerca de la base del tallo anterior, terete en la base, gradualmente lateralmente comprimido hacia el ápice, algo flexuoso, 9 x 0.4-0.8 cm. **Hojas** 4, distribuidas hacia la mitad apical de los tallos, dísticas, la basal generalmente más pequeña; vainas tubulares, lateralmente comprimidas, infundibuliformes en seco, finamente estriadas, 16-20 x 4-8 mm; lámina angostamente elíptica a ovada, ápice desigualmente bilobado, coriácea, margen entero, 3.5-4.6 x 1.4-2.0 cm. **Bráctea espatácea** 1, obovada, redondeada, margen entero, conduplicada, rugosa en seco, cubriendo totalmente el pedúnculo, 27-35 x 13-15 mm. **Inflorescencia** apical, pauciflora, ligeramente arqueada, 7-8 cm de largo; pedúnculo delgado, totalmente oculto dentro de la bráctea espatácea, 1.5-2 cm de largo. **Brácteas florales** muy pequeñas, triangulares, agudas, abrazadoras, 1-1.5 mm de largo. **Flores** 3-5, simultáneas, resupinadas, verdosas a pardo verdosas; sin datos de fragancia. **Ovario** terete, delgado, liso, no inflado, 17-22 mm de largo. **Sépalos** extendidos, libres, 5-nervados, margen entero y extendido; el **dorsal** elíptico, obtuso, 15-18 x 7 mm; los **laterales** ovados, subagudos, oblicuos, 19.5 x 9.7 mm. **Pétalos** entreabiertos, libres, lineares, falcados, ápice redondeado, 1-nervados, margen entero, 16 x 1 mm. **Labelo** unido a la columna, entero, suborbicular, cortamente cuneado en la base, ápice ligeramente emarginado, margen entero, 22-24 x 26 mm; bicalloso, los callos muy cortos, delgados, paralelos en posición natural. **Columna** gruesa, obcónica, recta con el ápice ligeramente arqueado hacia arriba, 10 mm de largo, la superficie ventral con una cavidad a la cual se accesa por una hendidura alargada y angosta; provista ventralmente de un par de alas prominentes que se ensanchan gradualmente de la base hacia el ápice, las alas apicales ligeramente involutas. **Clinandrio** reducido, margen entero. **Antera** no vista. **Polinios** no vistos. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando la mitad del largo de la cavidad estigmática. **Nectario** poco profundo, amplio, sin traspasar el perianto, no ornamentado. **Cápsula** no vista.

Lithophytic, sympodial **herb. Roots** basal, fleshy, thin. **Stems** simple, cane-like, produced from near the base of the previous stem, terete at the base, laterally compressed above, somewhat flexuous. **Leaves** 4, distributed throughout the apical half of the stem, the basal one smaller; sheaths tubular, laterally compressed, infundibuliform when dry, minutely striated; blade narrowly elliptic to ovate, apex unequally bilobed, coriaceous, margin entire. **Spathaceous bract** 1, obovate, rounded, margin entire, conduplicate. **Inflorescence** apical, few-flowered, somewhat arching, peduncle thin, totally covered by the spathaceous bract. **Floral bracts** very small, triangular, acute. **Flowers** 3-5, simultaneous, resupinate, green to greenish brown. **Ovary** terete, thin, smooth. **Sepals** spreading, free, 5-veined, margin entire; **dorsal sepal** elliptic, obtuse, **laterals** ovate, subacute, oblique. **Petals** partly spreading, free, linear, falcate, apex rounded, 1-veined, margin entire. **Lip** united to the column, entire, sub-orbicular, base short cuneate, apex shallowly emarginate, margin entire; bicallose, the calli very short, thin, parallel. **Column** thick, obconical, straight with the apex slightly arching upwards; the ventral surface with a cavity accessed through a long narrow slit, apical wings slightly involute. **Clinandrium- hood** reduced, margin entire. **Rostellum** apical, slit. **Nectary** shallow, wide, without penetrating the ovary.

OTHER RECORDS PERU: Cuzco: Convención: along road to Quillabamba, ca 9000 ft, 26 III 1986, *Lee Moore sub D. E. Bennett 3584*, illustration, xerox, AMO!

DISTRIBTUION AND ECOLOGY: Known only from the collections cited, both originating from the area immediately northeast of Cuzco, lithophytic at 2400-2500 m altitude. Flowering in March.

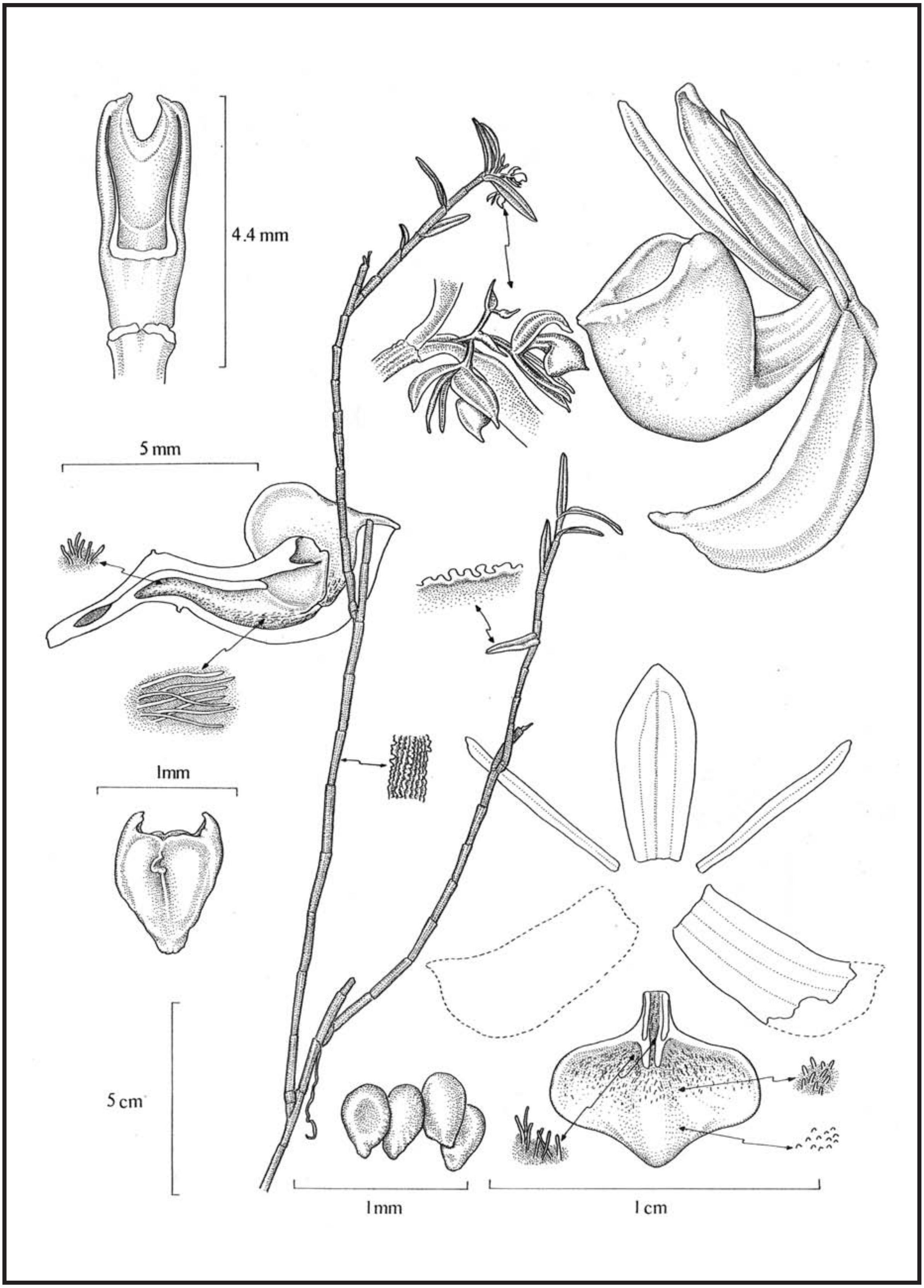


RECOGNITION: *Epidendrum orbiculatum* belongs to the Cupreum Subgroup of the Megalospathum Group, recognized by the wide, single, semiovate spathe, the erect stems with 3-5 coriaceous leaves, and resupinate flowers; the ventral surface of the column with a cavity accessed through a long narrow slit. The species has a sub-orbicular lip, somewhat wider than long, the margin entire. The two following species have been generally confused with it. *Epidendrum kymatochilum* Hágsater & Dodson from the border between Ecuador and Peru is recognized by the cuneate, flabellate, lip, with a pair of incipient, basal hemi-circular lobes, their margin undulate. *Epidendrum cupreum* F.C.Lehm. & Kraenzl. has smaller flowers, the sepals 10 mm long, and the lip ecallose; this species is distributed along the eastern slope of the Andes from southern Colombia to southern Ecuador.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin, *orbicularis*, circular; in reference to the circular shape of the lip.

Authors: E. Santiago & E. Hágsater **Illustrator: M. López R.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM ORIPICORANENSE Hágsater & E.Santiago **Plate 1365**

EPIDENDRUM ORIPICORANENSE Hágsater *et* E.Santiago, *sp. nov.*

Type: PERU: Cajamarca: San Ignacio; San José de Lourdes, "Campamento Zural, base del Cerro Picorana", 2200 m, 23 January 1999, ***Camilo Díaz 10495, J. Yactayo, E. Palomino, C. Vargas, O. Portocarrero, M. Medina, O. Díaz & E. Zurita***. Holotype: USM! Isotypes: AMO! (Illustration voucher). MO!

Epidendro spasmoso Hágsater & Dodson simile sed floribus purpureo-viridibus aliquantum minoribus, columna geniculata respectu ovario et valde arcuata, labelli margine integro distinctum.

Hierba terrestre, monopodial, de crecimiento sucesivo lateral, de ca. de 50 cm de alto. **Raíces** producidas de los entrenudos basales del tallo inicial, delgadas, 0.4-0.7 mm de grosor. **Tallos** tipo caña, teretes, delgados, producidos del entrenudo subapical del tallo anterior, progresivamente más cortos, 7.5-43 x 0.1-0.2 cm. **Hojas** 6-11, distribuidas hacia la parte media apical de los tallos; vaina tubular, finamente estriada, verrugosa, 0.5-1.5 x 0.1-0.2 cm; lámina subcoriácea, lanceolado oblonga, ápice incipientemente bilobado, margen crenulado, 0.6-2.3 x 0.2-0.3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, sencilla, dística, suberecta, ca. 1.0 cm de largo; pedúnculo muy corto, filiforme, 2-3 mm de largo; raquis no ornamentado. **Brácteas florales** más cortas que el ovario, triangular lanceoladas, acuminadas, abrazadoras, 2-3 mm de largo. **Ovario** terete, delgado, no inflado, no ornamentado, 3-4 mm de largo. **Flores** 2-3, simultáneas, no resupinadas, morado verdosas tornándose morado marrón con el tiempo, labelo cremoso; sin datos de fragancia. **Sépalos** entreabiertos, libres, obtusos, 3-nervados, margen entero, extendido; el **dorsal** obovado elíptico, 5 x 2 mm; los **laterales** elípticos, oblicuos, apiculados, 6 x 2.5 mm. **Pétalos** ascendentes, libres, lineares, subobtusos, 1-nervados, margen entero, 6 x 0.5 mm. **Labelo** unido a la columna, entero, abrazando a la columna en posición natural sin envolverla por completo, truncado en la base, anchamente apiculado en el ápice, piloso en la mitad basal, margen entero, 4.2 x 6.3 mm; disco provisto de un par de quillas basales laminares, paralelas, muy cortas. **Columna** geniculada con respecto del ovario, delgada, fuertemente arqueada hacia arriba, 4.4 mm de largo. **Clinandrio** reducido, margen entero. **Antera** obovoidea, 4-locular. **Polinios** 4, ovoides, lateralmente comprimidos, semejantes en tamaño; caudículas no vistas. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** penetrando ¼ del ovario, angosto, no inflado, pubescente, la ornamentación orientada hacia el fondo. **Cápsula** no vista.

Terrestrial, monopodial **herb** with successive lateral growths. **Roots** produced from the basal internodes of the main stem, thin. **Stems** cane-like, terete, thin, produced from a sub-apical internode of the previous stem, progressively shorter. **Leaves** 6-11, distributed along the apical half of the stems; sheath tubular, minutely striated, verrucose; blade sub-coriaceous, lanceolate-oblong, apex slightly bilobed, margin crenulate. **Inflorescence** apical, flowering only once, simple, distichous, sub-erect, short; peduncle very short, filiform; rachis unornamented. **Floral bracts** much shorter than the ovary, triangular-lanceolate, acuminate, amplexicaul. **Ovary** terete, thin, not inflated, unornamented. **Flowers** 2-3, simultaneous, non-resupinate, greenish purple turning purple-brown with age, lip cream-colored. **Sepals** partly spreading, free, obtuse, 3-veined, margin entire, spreading; dorsal sepals obovate-elliptic; lateral sepals elliptic, oblique, apiculate. **Petals** ascendant, free, linear, sub-obtuse, 1-veined, margin entire. **Lip** united to the column, entire, embracing the column in natural position without covering it completely, base truncate, apex widely apiculate, the basal half pilose, margin entire; disc provided with a pair of basal, laminar, parallel, very short keels. **Column** geniculate with respect to the ovary, thin, strongly arching upwards. **Clinandrium-hood** reduced, margin entire. **Anther** obovoid, 4-celled. **Pollinia** 4, obovoid, laterally compressed. **Rostellum** apical, slit. **Nectary** penetrating ¼ of the ovary, narrow, not inflated, pubescent, ornamentation turning inwards.

OTHER SPECIMENS: PERU: Cajamarca: San Ignacio; San José de Lourdes, Cerro Picorana, 2830 m, 17 VIII 1998, *Campos 5562*, MO!

DISTRIBUTION AND ECOLOGY: Known only from the Cerro Picorana, an eastern branch of the Andes in Northern Peru, just south of the Ecuadorean border, terrestrial at 2200-2830 m altitude. Flowering in January and August.

RECOGNITION: *Epidendrum oripicoranense* belongs to the Elleanthoides Group, Rhombochilum Subgroup which is characterized by the thin, branching habit, narrow, short, sub-coriaceous leaves with a crenulate margin and unequally bilobed apex, racemose, sub-distichous, short, inflorescence, with successive flowers, the entire lip embracing the column. The species is recognized by the tall plants producing new stems sub-apically from the older stems, leaves lanceolate-oblong, short, 0.6-2.3 cm long; inflorescence sub-sessile with 2-3 greenish purple flowers, sepals 5-6 mm long, column geniculate with respect to the ovary and strongly arched upwards. This species has been previously confused with *Epidendrum spasmosum* (Santiago, 2004) which is vegetatively very similar, but flowers are white, the apices of the sepals tinged pink, sepals 7.5-9.2 mm long, column straight with respect to the ovary and the margin of the lateral lobes of the lip erose (the original description of that species is a combination of that species and the species here described as new). *Epidendrum rhodanthum* Hágsater & Dodson from northern Ecuador has 4-8 pink colored flowers, sepals 8.5 mm long and the lip transversely elliptic with a minute apicule.

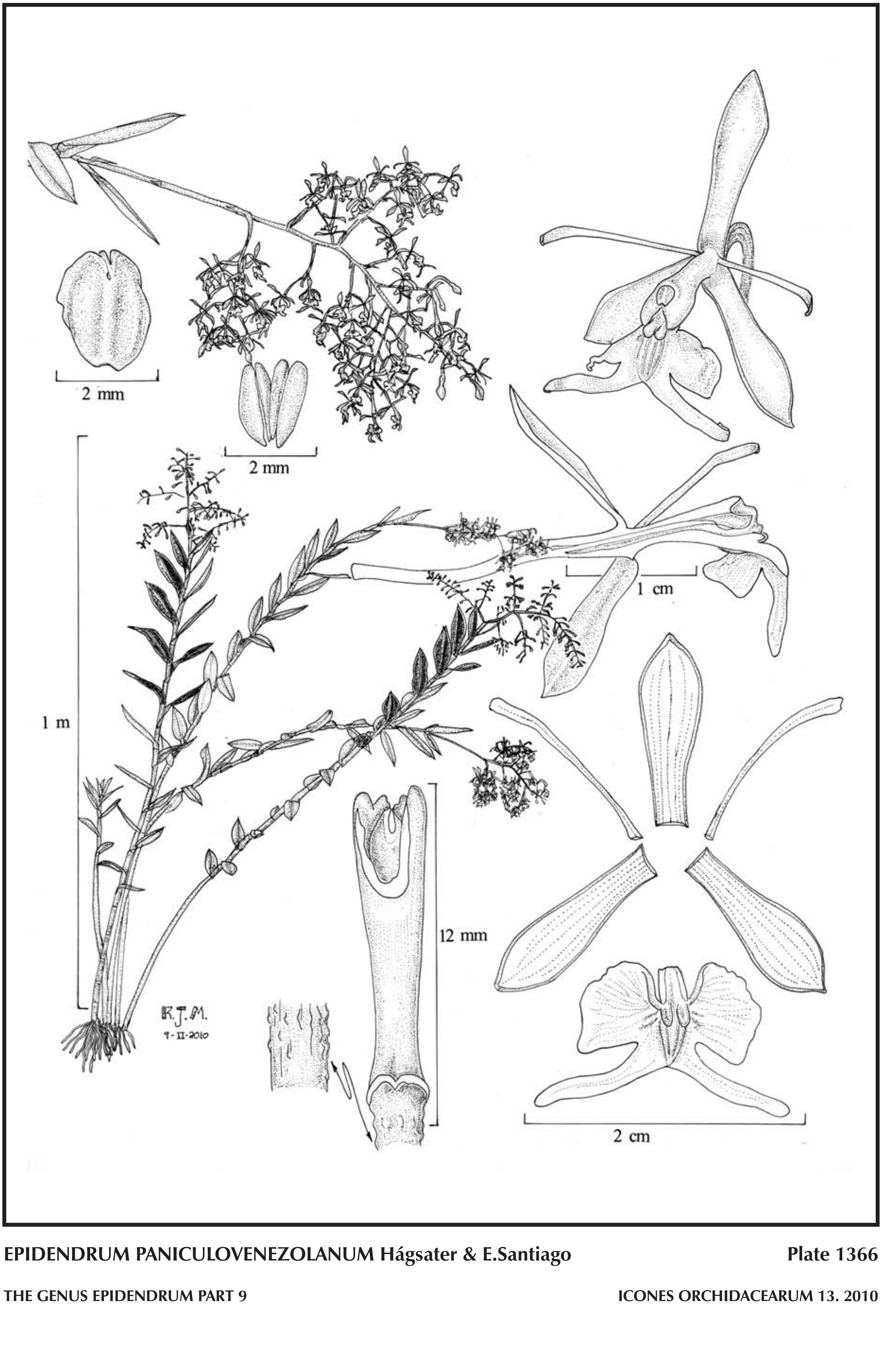


CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek ορεο-, mountain-, in compound words, and Picorana, the mountain on which the species has been collected.

REFERENCE: Santiago, E., 2004, *Epidendrum spasmosum* Hágsater & Dodson, in E. Hágsater & L. Sánchez (eds.), **Icon. Orchid. (Mexico)** 7: pl. 789.

Authors: E. Hágsater & E. Santiago **Illustrator: M. López R.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM PANICULOVENEZOLANUM Hágsater & E.Santiago

Plate 1366

EPIDENDRUM PANICULOVENEZOLANUM Hágsater *et* E.Santiago, *sp. nov.*

Type: VENEZUELA: Mérida: La Azulita-Jají, ***G. Gerlach 3135.*** Holotype: AMO! (Illustration voucher).

Epidendro floribundo Kunth simile sed floribus majoribus viridi-ochraceis dorsaliter cum brunneo-purpureo suffultis, foliis valde cum purpureo suffultis recedit.

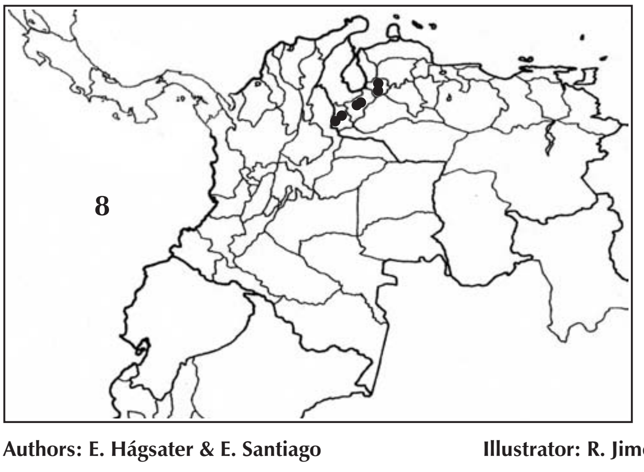
Hierba epífita o terrestre, simpodial, cespitosa, ca. 180 cm de alto. **Raíces** basales, carnosas, blancas. **Tallos** sencillos, tipo caña, teretes, erectos, rectos, ca. 150 x 0.3-1.0 cm. **Hojas** 19, distribuidas en las ¾ partes apicales del tallo, alternas, articuladas, subcoriáceas, de color verde en el haz y púrpura intenso en el envés; vaina tubular, finamente estriada, verde-purpúrea, 2-6 cm de largo; lámina elíptica a angostamente elíptica, aguda, margen entero, ligeramente revoluto, 10.5-12 x 1.3-2 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, paniculada, florece una sola vez, pluriflora, subdensa, 16-40 cm de largo; provista de 6-7 racimos cortos, paucifloros, laxos, 8-15 cm de largo; cada uno de ellos con una bráctea basal, angostamente triangular, acuminada, escariosa, de hasta 3 cm de largo; pedúnculo terete, delgado, de color verde amoratado, 9 cm de largo; generalmente provisto de hasta 4 brácteas tubulares, agudas; las basales ligeramente imbricadas, 1.2-2.5 cm de largo. **Brácteas florales** mucho más cortas que el ovario, angostamente triangulares, acuminadas, abrazadoras, 5 mm de largo. **Flores** 65-80, simultáneas, resupinadas, sépalos verde ocráceo en la superficie ventral, fuertemente teñidos de pardo purpúreo dorsalmente, pétalos verdes, columna verdosa en la base tornándose blancuzca hacia en ápice, labelo blanco con los lóbulos apicales algo teñidos de verde; sin datos de fragancia. **Ovario** terete, delgado, no inflado, no ornamentado, 22-25 mm de largo. **Sépalos** extendidos, libres, angostamente oblanceolado-espatulados, unguiculados, agudos, 5-nervados, margen entero, extendido, 13-18 x 3-5 mm. **Pétalos** entreabiertos, libres, linear-filiformes, ápice redondeado, 1-nervados, margen entero, extendido, 13-17 x 1-1.5 mm. **Labelo** unido a la columna, trilobado, ligeramente cordado en la base, más ancho entre el lóbulo medio que entre los laterales, 8.5-10 x 16-22 mm; bicalloso, los callos pequeños, paralelos, algo lateralmente aplanados; disco provisto de 3 carinas delgadas, alargadas, agudas, alargadas hasta el seno apical de la lámina; lóbulos laterales oblicuamente dolabriformes, margen irregular, 5-6 x 5-6 mm; lóbulo medio profundamente bilobado y fuertemente divaricado, cada lóbulo linear oblongo, agudo, 6-11 x 2-2.5 mm. **Columna** recta, delgada en la base y dilatada hacia el ápice, 10-13 mm de largo. **Clinandrio** reducido, margen entero. **Antera** ovoide, 4-locular. **Polinios** 4, tipo ala de pájaro, semejantes en tamaño. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, de ¼ del largo de la cavidad estigmática. **Nectario** penetrando cerca de la mitad del ovario, delgado, no ornamentado. **Cápsula** no vista.

Epiphyte or terrestrial, sympodial, caespitose, tall **herb**. **Roots** basal, fleshy, white. **Stems** simple, cane-like, terete, erect, straight, tall. **Leaves** 19, distributed throughout the upper ¾ of the stem, alternate, articulate, sub-coriaceous, the upper side green, the underside dark purple; sheath tubular, minutely striated, purple-green; blade elliptic to narrowly elliptic, acute, margin entire, slightly revolute. **Inflorescence** apical, paniculate, flowering only once, somewhat densely many-flowered; provided with 6-7 short racemes, laxly few-flowered; peduncle terete, thin, purplish green, generally provided with up to 4 tubular, acute bracts, the basal ones imbricating. **Floral bracts** much shorter than the ovary, narrowly triangular, acuminate, amplexicaul. **Flowers** 65-80, simultaneous, resupinate, sepals internally ochre-green, the external surface strongly tinged purple-brown, petals green, the column green at the base, turning whitish towards the apex, lip white, the apical lobes somewhat tinged green. **Ovary** terete, thin, not inflated, smooth, long. **Sepals** spreading, free, narrowly oblanceolate-spatulate, unguiculate, acute, 5-veined, margin entire, spreading. **Petals** partly spreading, free, linear-filiform, the apex rounded, 1-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base slightly cordate, wider across the mid-lobe than across the lateral lobes; bicallose, the calli small, parallel, somewhat laterally compressed; disc provided with 3 thin, elongate, acute keels, reaching the apical sinus; lateral lobes obliquely dolabriform, margin entire; mid-lobe deeply bilobed, the lobes strongly divaricate, linear-oblong, acute. **Column** straight, base thin, dilated towards the apex, long. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, 4-celled. **Pollinia** 4, "bird-wing" type, sub-equal in size. **Rostellum** apical, slit. **Nectary** penetrating about half the ovary, thin, smooth.

OTHER SPECIMENS: VENEZUELA: Mérida: Without locality, IV 1842, *Linden 616*, K-L! W-R x2! near Tabay, Sierra Nevada, 2400 m, 6 VIII 1958, *Dennis 2194*, K-L x3! Jají, *Engel 273*, W-R! Ejido Azulita, 2100 m, III 1949, *Renz 5134*, RENZ x3! Los Chorros, 2000 m, 26 IV 1949, *Renz 5194*, RENZ x2! Jají, 4500 ft, *Schlim 132*, W-R! **Táchira:** Páramo Zumbador und Queninquea, 2500 m, 18 III 1951, *Renz 6687*, RENZ! Las Delicias, 1800 m, 5 V 1951, *Renz 6875*, RENZ x2! La Revancha, Quebrada El Muerto, 1800 m, 10 V 1951, *Renz 6923*, RENZ x2! Michelena-Boca de Monte, oeste de Zumbador, 1700 m, 28 VIII 1966, *Steyermark 96741*, AMES! K-L! **Trujillo:** Agua Obispo, 7000 ft, *Funck et Schlim 732*, BR! P! (Illustration, AMO) W-R x2! Boconó-Niquitao, Quebrada Honda, 1600 m, 27 III 1953, *Renz 7930*, RENZ!

DISTRIBUTION AND ECOLOGY: Native to the Cordillera de los Andes in western Venezuela; probably also found in neighboring Colombia; growing at 1400-2500 m altitude. Flowering from March to August.

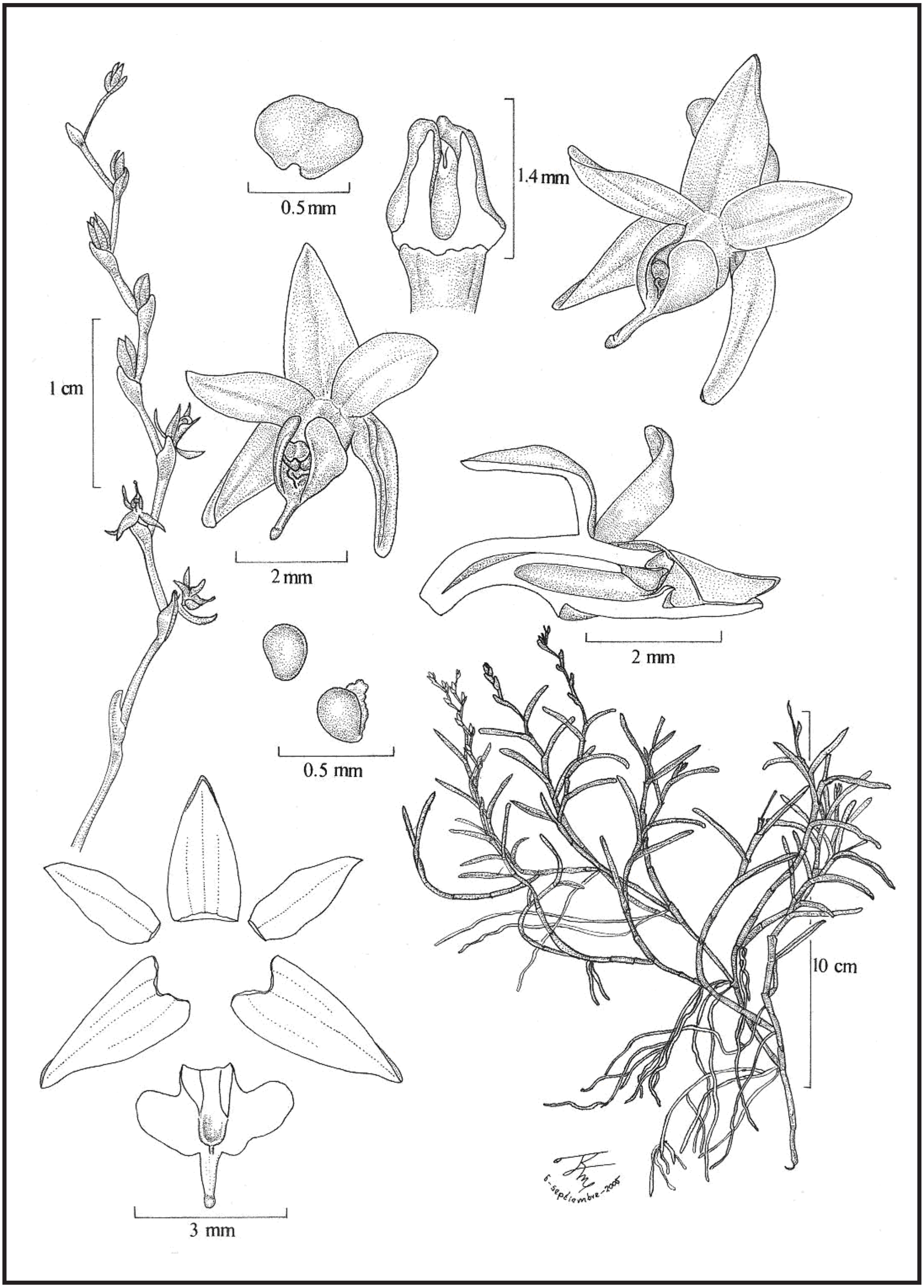
RECOGNITION: *Epidendrum paniculovenezolanum* belongs to the Pseudepidendrum Group is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, apical inflorescence, lacking a spathaceous bract, the petals filiform and the lip usually 3-lobed, with 3 parallel fleshy keels, the apical lobe often bifurcate, and the pollinia "bird-wing" type and Paniculatum Subgroup which has green and white flowers, often parked with purple on the disc of the lip and apex of the column. The species is recognized by the large flowers, sepals 13-18 mm long, internally ochre-green, the external surface strongly tinged purple-brown; lip wider across the midlobe than across the lateral lobes. *Epidendrum macroceras* Schltr., apparently endemic to the south side of the Sierra Nevada de Santa Marta, has smaller flowers, sepals 9 mm long, greenish yellow flowers with the lip white. *Epidendrum lilacinoides* Hágsater & E.Santiago has aromatic, purple colored, somewhat smaller flowers (sepals 11-14 mm). *Epidendrum floribundum* Kunth from the Amazonian lowlands of Peru has smaller, green, flowers, (sepals 10.5 mm long) with a white lip. *Epidendrum angaritae* Hágsater has smaller plants, to 55 cm tall, olive-green flowers, the sepals externally brown, 15-17 mm long, and the lip white with the disc heavily spotted purple.



CONSERVATION STATUS: DD. Data deficiente.

ETYMOLOGY: From the Latin *panicula,* a branched inflorescence, and Venezuela, in reference to the range of this species which belongs to the paniculatum group and is widespread along the Venezuelan Andes.

Authors: E. Hágsater & E. Santiago **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM PARANTHICUM Rchb.f. **Plate 1367**

EPIDENDRUM PARANTHICUM Rchb.f., Bot. Zeitung (Berlin) 10: 732. 1852.

Type: GUATEMALA: ***Warscewicz s.n.***, Holotype: W-R 50154! [cited incorrectly by Barringer as W-R 50434]; tracing AMES! [incorrectly annotated as *Liebmann,* cited by Ames, Hubbard & Schweinf., 1936, and Williams, 1940.]

Synomyms: *Epidanthus paranthicus* (Rchb.f.) L. O. Williams, Bot. Mus. Leafl. 8: 150. 1940.

Epidendrum sancti-ramoni Kraenzl. Vierteljahrsschr. Naturforsch. Ges. Zürich 74: 137. 1929. Type: COSTA RICA: Alajuela: hills of Tremedal near San Ramón, 1500-1600 m, 10 May 1913, ***Tonduz 17617.*** Holotype: B, destroyed; Lectotype (designated by Barringer, 1991): AMES 22654; Isolectotypes AMES 22205, LE! P! W-R! Z x2!

Hierba epífita o raramente litófita, simpodial, escandente, 8.5-13 cm de alto. **Raíces** originándose en la base de cada tallo, escasas, filiformes, blancas, 0.2-0.5 mm de grosor. **Tallos** sencillos, producidos de los entrenudos basales de tallos anteriores, tipo caña, teretes, muy delgados, erectos, rectos, 4-13 x 0.05-0.1 cm. **Hojas** 5-8, distribuidas a todo lo largo del tallo, alternas, articuladas, comunmente erecto extendidas; vaina tubular, finamente estriada, 3-10 x 0.5-1 mm; con una lígula muy pequeña del lado opuesto de la lámina, triangular, subaguda, conduplicada, 2-3 mm de largo; lámina acicular a linear, aguda, coriácea, semiterete, margen entero, 6-26 x 0.8-1.7 mm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, dística, secundiflora, pauciflora, laxa, erecta, 4-6.5 cm de largo; pedúnculo lateralmente aplanado, recto, 10-17 mm de largo; provisto en la parte media de una bráctea semejante a las florales, lanceolada, subaguda, abrazadora, 3-6 mm de largo; raquis algo fractiflexo. **Brácteas florales** más largas que el ovario, amplexicaules, anchamente triangulares, tubulares en la base, agudas en el ápice, 2-4 mm de largo. **Ovario** terete, delgado, no inflado, liso, 1.5-2 mm de largo. **Flores** 4-12, sucesivas, (aunque varias abiertas de manera simultánea) resupinadas, dísticas, de color amarillo, amarillo verdoso, blancas con labelo amarillo y raramente pardo rojizas*; sin datos de fragancia. **Sépalos** libres, ovado triangulares, agudos, 1 [3]-nervados, margen entero, 2.5-3.3 x 1.1-1.5 mm; el **dorsal** algo reflexo; los **laterales** entreabiertos, casi paralelos a la columna, oblicuos. **Pétalos** ligeramente reflexos, libres, angostamente ovados, agudos, 1-nervados, margen entero, 2.1-2.4 x 0.6-1 mm. **Labelo** unido a la columna, 3-lobado, base ligeramente cordada, margen entero, 2.3-2.5 x 2.3-3.2 mm; unicalloso, el callo semicircular, carnoso y ligeramente cóncavo, diminutamente apiculado, oculto y fusionado casi en su totalidad al ápice de la columna; lóbulos laterales insertados cerca de la base de la columna, oblongo elípticos, redondeados, abrazando a la columna en posición natural (sin envolverla por completo) 1.0-1.2 x 1.0-1.2 mm; lóbulo medio linear subulado, subagudo, algo carnoso en el ápice, 1-1.1 x 0.1-0.2 mm. **Columna** muy corta, recta, gruesa, 1.0-1.4 mm de largo. **Clinandrio** corto, margen entero. **Antera** reniforme, 2-lócular. **Polinios** 2, obovoides, lateralmente comprimidos; caudículas algo granulosas, ligeramente más largas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** penetrando 1/3 del ovario, amplio, no inflado, no ornamentado. **Cápsula** subglobosa, con el perianto persistente; pedicelo corto, subsésil; cuerpo 4-5 x 3-3.5 mm; cuello apical obsoleto.

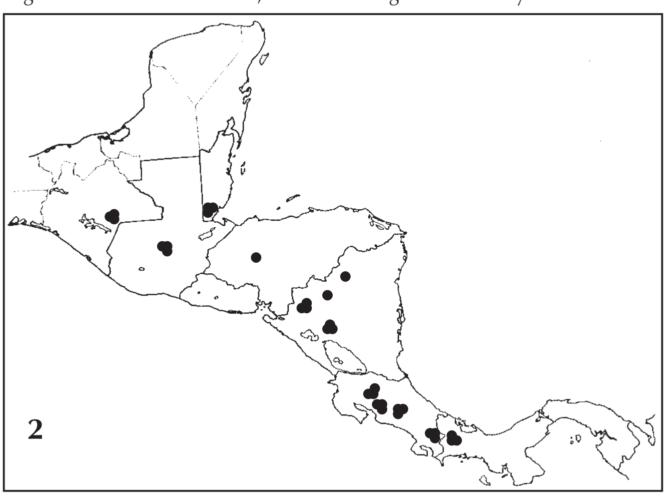
Epiphytic or rarely lithophytic, sympodial, scandent **herb. Roots** originating from the base of each stem, scarce, filiform, white. **Stems** simple, produced from the basal internodes of the previous stem, terete, very thin, erect, straight. **Leaves** 5-8, distributed throughout the stem, alternate, articulate, more or less fleshy, erect-spreading; sheath tubular, minutely striated, with a small ligule, narrowly triangular, acute, opposite the blade; blade acicular to linear, acute, more or less terete, margin entire. **Inflorescence** apical, flowering only once, racemose, distichous, secund, few-flowered, lax, erect; peduncle laterally compressed, straight, provided in the middle with a bract similar to the floral bracts; rachis somewhat zigzag. **Floral bracts** longer than the ovary, amplexicaul, widely triangular, tubular at the base, apex acute. **Ovary** terete, thin, not inflated, smooth. **Flowers** 4-12, successive (though several are open simultaneously), resupinate, distichous, yellow or greenish yellow, white with a yellow lip, rarely brownish red*. **Sepals** free, ovate-triangular, acute, 1 [3]-veined, margin entire, the dorsal sepal somewhat reflexed, the lateral sepals partly spreading, nearly parallel to the column, oblique. **Petals** slightly reflexed, free, narrowly ovate, acute, 1-veined, margin entire. **Lip** united to the column, 3-lobed, base somewhat cordate, margin entire; callus single, semi-circular, fleshy, slightly concave, minutely apiculate, hidden and nearly totally fused to the apex of the column; lateral lobes inserted at the base of the column, oblong-elliptic, rounded, embracing the column in natural position (without completely covering it); mid-lobe linear, subulate, sub-acute, apex somewhat fleshy. **Column** very short, straight, thick. **Clinandrium-hood** short, margin entire. **Anther** reniform, 2-celled. **Pollinia** 2, obovoid, laterally compressed, caudicles somewhat granulose, slightly longer than the pollinia. **Rostellum** apical, slit. **Nectary** penetrating 1/3 of the ovary, wide, not inflated, smooth. **Capsule** sub-globose, perianth persistent; pedicel short, sub-sessile, apical neck obsolete.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Ranging from southern Mexico to western Panama; epiphytic or rarely lithopytic, growing at 900-1560 m altitude. Flowering mainly from May to July, throughout the year.

RECOGNITION: *Epidendrum paranthicum* belongs to the Epidanthus Group, which is characterized by short small, somewhat scandent plants with very thin stems, very narrow, more or less fleshy leaves, with a small, narrowly triangular, acute ligule opposite the blade, an apical, distichous, usually secund inflorescence, and 2 or 4 pollinia. The species is recognized by the delicate plants, 8.5-13 cm tall, with acicular, linear leaves, small (sepals 2.5-3.3 mm long), variable color flowers, the dorsal sepal and petals somewhat reflexed, 3-lobed lip with the callus semi-circular and minutely apiculate. *Epidendrum tritropianthum* Hágsater & E.Santiago is vegetatively very similar, but the flowers are white, with the margin of the lateral lobes of the lip reddish purple, the petals spreading and the lip ecallose with 3 low keels. *Epidendrum insolatum* Barringer has similar sized plants but the stems very short and robust (3-5 x 0.25-0.3 cm), oblong-elliptic, very fleshy leaves, ochre-colored flowers and lanceolate, reflexed petals.

***NOTE:** Numerous color forms have been detected, in particular in Costa Rica, but because no consistent difference has been found in the vegetative or floral structures, we have not given them any taxonomic status. The general coloration is yellow or yellow green, but in Monteverde and Palma de San Ramón (Alajuela) the flowers are white with a yellow lip; on fila de Savegre the flowers are brownish red; and the *Endres* specimens from Cartago, Pizirres(?) are described as white dotted with purple.



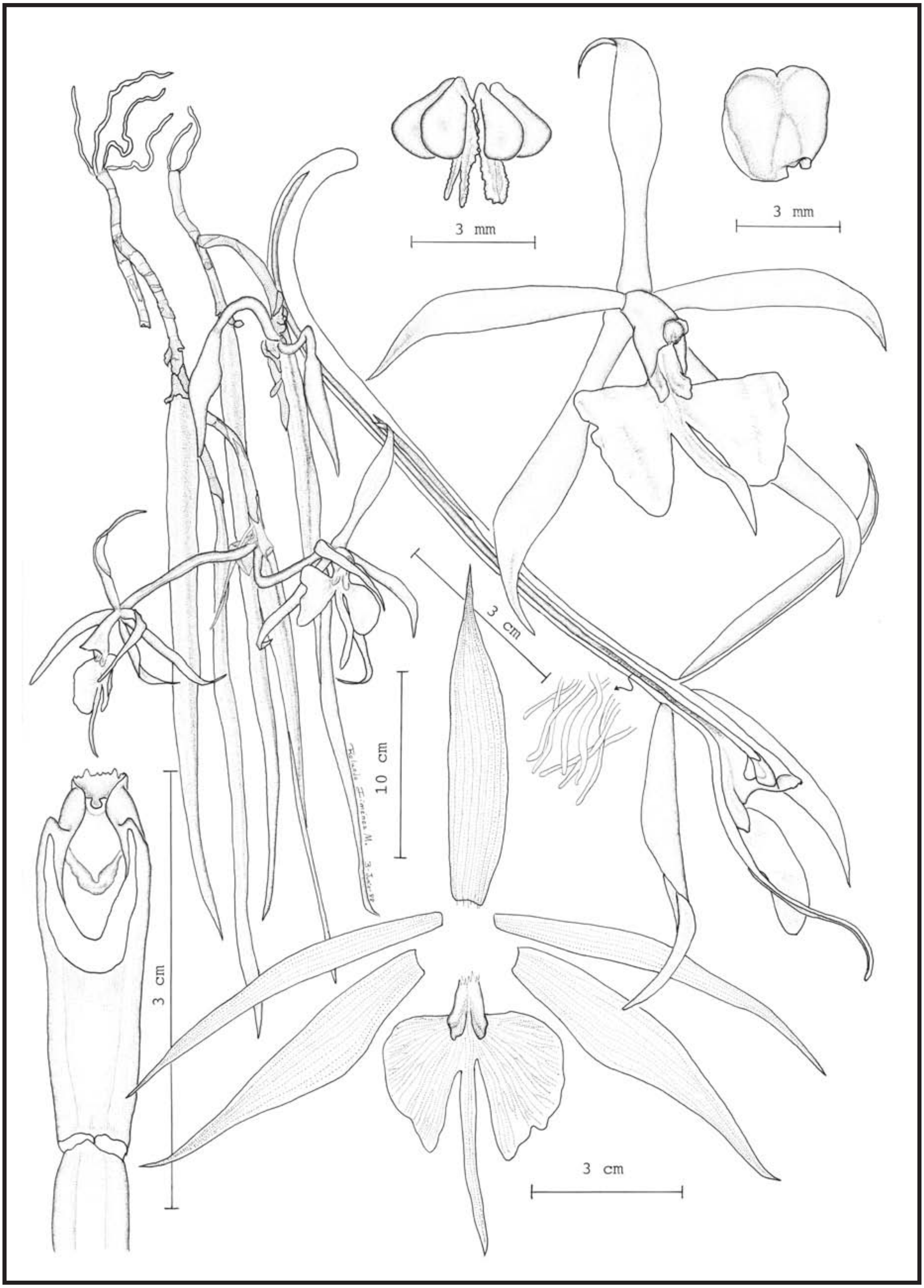
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CONSERVATION STATUS: DD. Data deficient. Widespread and apparently common.

ETYMOLOGY: From the Greek παρα, beside, near, and ανθος, flower, probably referring to the flowers which closely alternate on each side of the rachis.

REFERENCES: Ames, O., F.T. Hubbard and C. Schweinfurth, 1936, **The Genus *Epidendrum* in the United States and Middle America,** Cambridge, p. 145. Barringer, K., 1991, A revision of *Epidendrum* subgenus *Epidanthus* (Orchidaceae), **Britonia** 43(4): 247-248. Dressler, R. L., 1983, Epidanthus ¿será o no será? *Epidanthus crassus*, una nueva especie de Panamá, **Orquídea (Mexico City)** 9(1): 13-19. Hágsater, E., 2005, *Epidendrum* in F., Pupulin, **Vanishing Beauty: Native Costa Rican Orchids** 1: 270. 304, San José C.R. Editorial de la Universidad de Costa Rica. Williams, L. O., 1940, A new genus of the Orchidaceae from Central America, **Bot. Mus. Leafl.** 8: 148-151.

Authors: E. Santiago & E. Hágsater **Illustrator : R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM PARKINSONIANUM Hook. **Plate 1368**

EPIDENDRUM PARKINSONIANUM Hook., Bot. Mag. 66: t. 3778. 1840.

Type: MEXICO: ***Parkinson***. Lectotype (designated by Hágsater in Hágsater & Salazar (eds) 1990): the original plate (op. cit.).

Synonyms: *Auliza parkinsoniana* (Hook.) Brieger, Orchideen (Schlechter) 3, ed. 1(9 leiferung): 546. 1977. *nomen ileg. Coilostylis parkinsoniana* (Hook.) Withner & Harding, The Cattleyas and their relatives: The Debatable Epidendrums, pg. 145. 2004.

Epidendrum aloifolium Bateman, Orchid. Mex. & Guat. t. 25. 1840. non *Epidendrum aloifolium* L. (= *Cymbidium aloifolium* Sw.)

Brassavola pescatorei Hort. ex Stein., Orchideenb. 230. 1892. *in synon*.

Epidendrum pugioniforme Regel. Act. Hort. Petrop. 11:305. 1890. Type: Hortulanus ***Berge***, Lipsiae, huc speciem sub nomine falso Epidendri Brassavolae e Mexico importavit. Holotype: LE! *Auliza pugioniforme* (Regel.) Brieger, Orchideen (Schlechter) 3 ed., 1(9 leiferung): 546. 1977. *nomen ileg.*

Epidendrum falcatum Lindl. var. *zeledoniae* Schltr. Repert. Spec. Nov. Regni Veg. Beih. 19: 37. 1923. Type: COSTA RICA: Auf *Magnolia*, blühend im Januar 1921, im Garten der Mdme. ***Amparo de Zeledón sub A. Tonduz 132***. Holotype: B destroyed. Lectotype (designated by Hágsater, 1990): Tracing based on the same collection, AMES 39210!

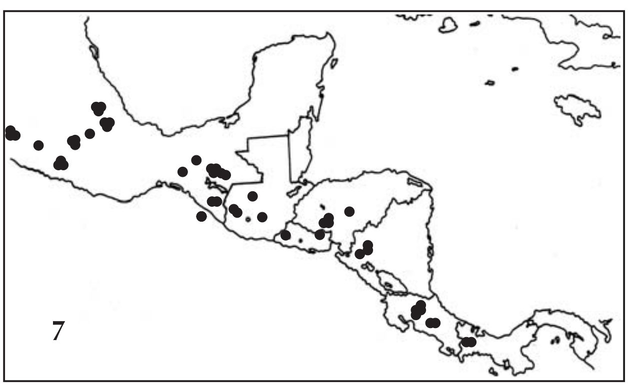
Hierba epífita, simpodial, cespitosa, colgante, [20-] 40-200 cm de alto. **Raíces** basales, carnosas, delgadas a gruesas, 1.5-3.0 mm de grosor. **Tallos** sencillos, teretes, rectos a ligeramente curvados, el tallos nuevo originándose en la mitad del tallo anterior, 4-11 x 0.2-0.5 cm; cubierto cuando joven por 2-3 vainas papiráceas, escariosas, 4-13 cm de largo. **Hojas** una, en el ápice de cada tallo, articulada; lámina linear elíptica a linear lanceolada, acuminada, gruesa, coriáceo suculenta, 8-54 x 0.7-3.0 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, producida del tallo maduro, florece una sola vez, racemosa, 12-23 cm de largo; pedúnculo terete, corto, 0.5-1.2 cm de largo; cubierto por 1-2 brácteas, conduplicadas, oblongo triangulares, agudas, 0.8-1.5 cm de largo; raquis terete, recto. **Brácteas florales** mucho más cortas que el ovario, triangulares, acuminadas, 1.0-1.8 x 0.3-0.4 cm. **Ovario** terete, no inflado, no ornamentado, 60-180 x 1-3 mm. **Flores** 2, raramente 1, 3 o 4, resupinadas, sépalos y pétalos verde a amarillo verdosos, labelo y columna blanco, callos amarillos; fragancia nocturna, intensa, dulce. **Sépalos** extendidos, libres, angostamente elíptico lanceolados, ápice acuminado recurvado, 7-nervados, con venas secundarias pareciendo ser 9-11 nervados, margen entero, algo revoluto, [35-] 40-85 x 7-14 mm; los **laterales** oblicuos. **Pétalos** inflexos, libres, linear elípticos, ligeramente oblicuos, acuminados, 3-nervados, con dos venas secundarias, dando la apariencia de ser 5-nervados, margen entero, ligeramente revoluto en la base, [35-] 40-78 x 3-7 mm. **Labelo** unido a la columna, trilobado, base truncada, recto, paralelo a la columna en posición natural, [25-] 35-50 [-65] x 23-45 mm; bicalloso, los callos laminares, prominentes; lóbulos laterales oblicuamente ovados, márgenes enteros raramente sinuados, [12-] 20-33 [-40] x [8-] 1.2-2.0 mm; lóbulo medio muchos más largo que los lóbulos laterales, linear, acuminado, [25-] 33-45 [-50] x [0.5-] 1.5-3.0 mm. **Columna** recta, delgada, 20-35 mm de largo. **Clinandrio** corto, eroso. **Antera** ovoide, terminando en una punta truncada, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, más largas que los polinios, viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando un medio de la cavidad estigmática. **Nectario** profundo, penetrando todo el ovario, piloso. **Cápsula** ovoide, pedúnculo corto, 2.5-5 cm de largo, cuerpo ubicado hacia el centro, 5-6 x 2-3 cm, cuello apical 3-6 cm de largo.

Epiphytic, sympodial, caespitose, pendent, long **herb. Roots** basal, fleshy, thin to thick. **Stems** simple, terete, straight to slightly curved, the new stem originating from the middle of the previous stem, covered when young by 2-3 papiraceous, scariose sheaths. **Leaf** single, at the apex of the stem, articulate; blade linear-elliptic to linear lanceolate, acuminate, thick, succulent-coriaceous. **Inflorescence** apical, produced from the mature stem, flowering only once, racemose; peduncle terete, short; covered by 1-2 conduplicate, oblong-triangular, acute bracts; rachis terete very short. **Floral bracts** much shorter than the ovary, triangular, acuminate. **Ovary** terete, not inflated, smooth, very long, about twice the length of the sepals. **Flowers** 2, rarely 1, 3-4, resupinate, sepals and petals green to greenish yellow, lip and column white, calli yellow; nocturnal fragrance intense, sweet. **Sepals** spreading, free, narrowly elliptic-lanceolate, acuminate, recurved, 7-veined, with secondary veins so as to appear 9-11-veined, margin entire, somewhat revolute, the lateral sepals oblique. **Petals** inflexed, free, linear-elliptic, slightly oblique, acuminate, 3-veined, with a pair of secondary veins so as to appear 5-veined, margin entire, slightly revolute at the base. **Lip** united to the column, 3-lobed, straight, parallel to the column in natural position, base truncate; bicallose, the calli laminar, prominent; lateral lobes obliquely ovate, margins entire, rarely sinuate; midlobe much longer than the lateral lobes, narrow, linear, acuminate. **Column** straight, thin. **Clinandrium-hood** short, erose. **Anther** ovoid, ending in a truncate point, 4-celled. **Rostellum** apical, slit. **Nectary** deep, penetrating the full length of the ovary, pilose. **Capsule** ovoid, peduncle short, body displaced towards the base, with a long neck.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Widely distributed in Mexico (Jalisco, Michoacán, México, Morelos, Guerrero, Oaxaca, Veracruz and Chiapas), Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, and Panamá. Epiphytic in pine-oak forest at 1000-2600 m altitude. Flowering from March to August.

RECOGNITION: *Epidendrum parkinsonianum* belongs to the Falcatum Group which is characterized by the sympodial, caespitose, pendent plants, coriaceous to succulent leaves, apical, racemose inflorescence with a short peduncle, covered by 1-2 bracts, and the large, star-shaped flowers. The species is recognized by the long pendent plants, the stems are neither thickened into pseudobulbs, nor brittle, the large, white, flowers, sepals 40-85 mm long, greenish yellow on the backside, and the narrow mid-lobe of the lip which is about twice as long as the lateral lobes; the nectary is pilose inside. It has been confused with the endemic (to Mexico: Durango, Guerrero, Oaxaca, and Puebla) *Epidendrum falctatum* Lind. since its original description, which is lithophytic, repent to pendent, succulent and brittle, forming a more or less thickened, short, pseudobulb, the inflorescence originates from the mature pseudobulb, usually has 4-8 white flowers the sepals pink on the backside, calli yellow, the lip is deeply 3-lobed, with the mid-lobe slightly longer than the lateral lobes, the nectary is smooth inside. *Epidendrum lacertinum* Lindl. produces the many-flowered inflorescence from the immature pseudobulb, the flowers are green, the lip often with red at the base, and the mid-lobe purple, with the column and calli white; the lateral lobes are small and triangular, the mid-lobe linear-acuminate. *Epidendrum hagsateri* Christenson produces the 5-8-flowered inflorescence from the nearly mature pseudobulb, the sepals and petals are green to copper-brown, the lip green to yellowish green, with the disc sometimes tinged red, the calli red, the column green turning cream-colored towards the apex; the lateral lobes are sub-orbicular to sub-rectangular, and the mid-lobe narrowly triangular.



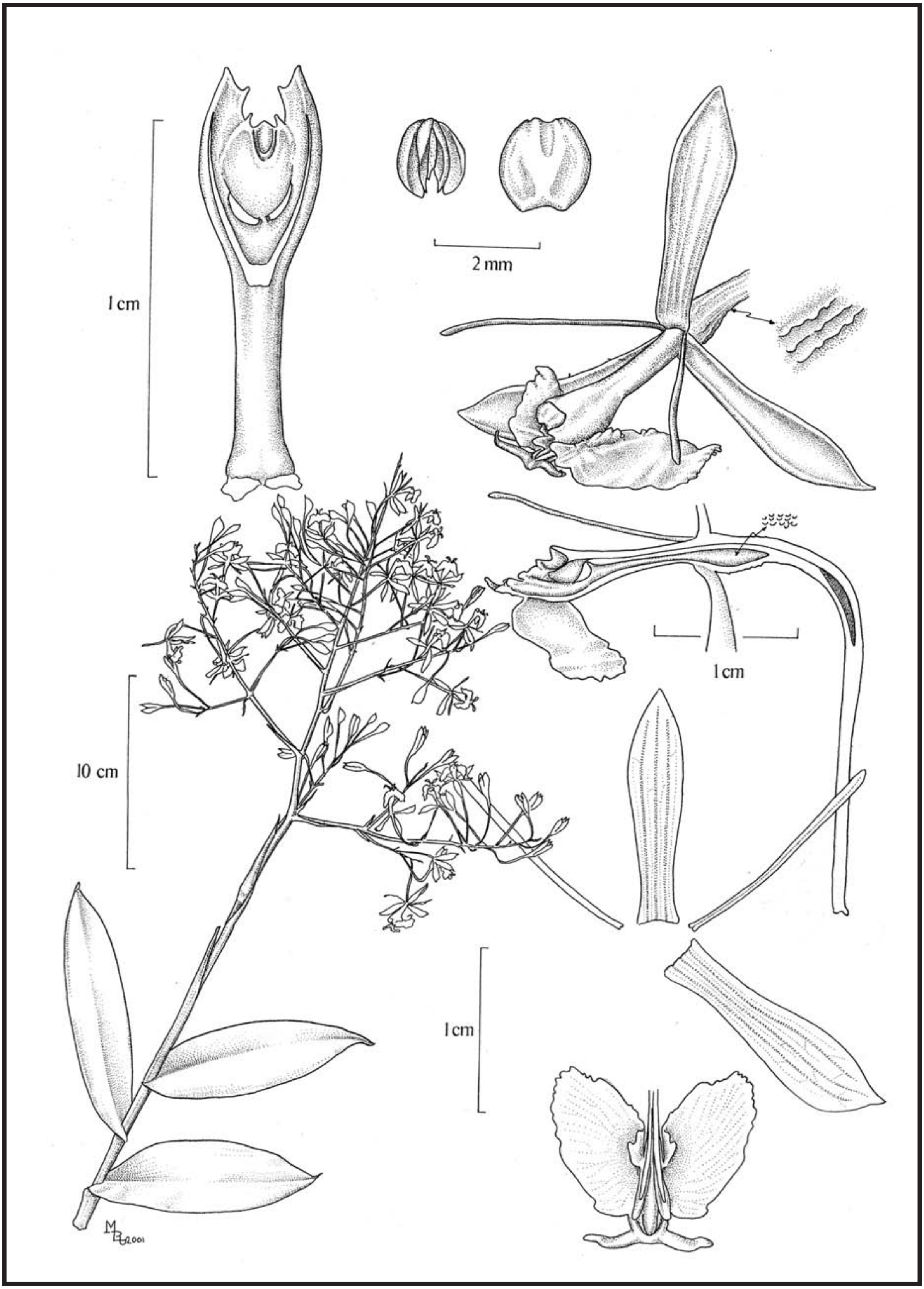
CONSERVATION STATUS: NT. Not threatened. Widely distributed and common locally.

NOTE: Though this species had been previously illustrated in Icon. Orchid. (Mexico) 1: pl. 37, 1990 it is treated again here providing full distribution information outside Mexico, as well as additions to the taxonomic synonymy, in particular *Epidendrum pugioniforme*.

ETYMOLOGY: In honor of John Parkinson, British Consul in Mexico, who sent numerous orchid plants and herbarium specimens to England during the first half of the 19th Century.

REFERENCE: Hágsater, E., 1990, in E. Hágsater and G. A. Salazar, (eds.) **Icon. Orchid. (Mexico)** 1: pl. 37.

Authors: L. Sánchez & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM PERALTUM Schltr. **Plate 1369**

EPIDENDRUM PERALTUM Schltr., Repert. Spec. Nov. Regni Veg., Beih. 7: 250. 1920.

Basyonym: *Epidendrum altissimum* F.Lehm. & Kraenzl. in Bot. Jahrb. Syst. 26: 471. 1899. Type: COLOMBIA: Nariño: Tuquerres, 1400-1800 m, ***F. C. Lehmann 8317.*** Holotype: K-L! Isotypes: AMES x2! Not *Epidendrum altissimum* Jacquin, 1760 (=*Oncidium altissimum* (Jacq.) Sw.), nor Bateman, 1838 (= *Encyclia altissima* (Bateman ex Lindl.) Schltr.).

Hierba epífita o terrestre, simpodial, cespitosa, erecta, de 60-250 cm de alto. **Raíces** basales, carnosas, 2-3 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base a lateralmente aplanados en el ápice, erectos, rectos, 35-90 x 0.7-1.5 cm; cubiertos en la mitad basal por vainas tubulares no foliares, escariosas y fibrosas con el tiempo, 4.5-7 cm de largo. **Hojas** 11 o más, distribuidas en la mitad apical del tallo, dísticas, articuladas, erecto extendidas, desiguales en tamaño (la basal más pequeña); vainas tubulares, finamente estriadas, 2-6 x 0.7-1.5 cm; lámina lanceolada, cortamente acuminada, subcoriácea, margen entero, 5.5-20 x 2.5-4.6 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, paniculada, erecta, pluriflora, 25 cm de largo; pedúnculo delgado, lateralmente aplanado, recto, 11 cm de largo; cubierto por 2 brácteas tubulares, escariosas, acuminadas, parcialmente imbricadas, 6-9 cm de largo; raquis terete, delgado, con 5-8 racimos (los basales a su vez ramificados) extendidos, paucifloros, laxos; cada uno de ellos con una bráctea basal angostamente triangular, acuminada, 2-6 cm de largo. **Brácteas florales** más cortas que el ovario, angostamente triangulares, acuminadas, abrazadoras, 4-11 mm de largo. **Ovario** terete, delgado, no inflado, ligeramente papiloso, 25 mm de largo. **Flores** ca. 90, sucesivas, resupinadas, de color amarillo verdoso algo teñidas de rosado a totalmente rosado sucio; sin fragancia. **Sépalos** extendidos, libres, carnosos, oblongo oblanceolados, obtusos, 3-nervados, no ornamentados, margen entero, 14-16 x 3.5-4 mm; los **laterales** ligeramente oblicuos. **Pétalos** libres, filiformes, 1-nervados, redondeados en el ápice, margen entero, extendido, 14-15 x 0.3 mm. **Labelo** unido a la columna, 3-lobado, profundamente cordado en la base, 10 x 7-8 mm; bicalloso, los callos prominentes, corniformes, lateralmente aplanados, alargados algo más allá de la base del lóbulo medio; disco provisto de 3 quillas paralelas, la central prominente, muy carnosa, desvaneciéndose antes de llegar al seno apical, el par lateral algo más corto e incipiente; lóbulos laterales falcado-oblongos, fuertemente retrosos, semiparalelos a la mitad apical de la columna, margen irregular, 2.5 x 8 mm; lóbulo medio bilobado, con un istmo corto en la base, el ápice profundamente emarginado formando un par de lóbulos lineares fuertemente divaricados, margen entero, 4.5 x 8 mm. **Columna** recta, delgada, el ápice con un par de alas prominentes, redondeadas, 13 mm de largo. **Clinandrio** reducido, margen entero. **Antera** obovoide, 4-locular. **Polinios** 4, tipo "ala de pájaro", fuertemente comprimidos lateralmente, el par interior más pequeño; caudículas laminares. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** pequeños, de ¼ del largo de la cavidad estigmática. **Nectario** poco profundo, apenas penetrando el ovario, ligeramente inflado, ligeramente papiloso. **Cápsula** no vista.

Epiphytic or terrestrial, sympodial, caespitose, erect, tall **herb**. **Roots** basal, fleshy, thick. **Stems** simple, cane-like, terete at the base, laterally compressed towards the apex, erect, straight; the basal half covered by non-foliar, scarious sheaths becoming fibrous with time. **Leaves** 11 or more, distributed along the apical half of the stem, distichous, articulate, erect-spreading, unequal in size (the basal one smaller); sheaths tubular, minutely striated; blade lanceolate, short-acuminate, sub-coriaceous, margin entire. **Spathaceous bract** lacking. **Inflorescence** apical, paniculate, erect, many-flowered; peduncle thin, laterally compressed, straight, covered by 2 tubular, scarious, acuminate, partly imbricating bracts; rachis terete, thin, with 5-8 racemes (the basal ones themselves branching), spreading, lax, few-flowered; each with a narrowly triangular, acuminate bract at the base. **Floral bracts** shorter than the ovary, narrowly triangular, acuminate, amplexicaul. **Ovary** terete, thin, not inflated, slightly papillose, long. **Flowers** ca. 90, successive, resupinate, greenish yellow tinged with pink to totally dirty pink; without fragrance. **Sepals** spreading, free, fleshy, oblong-oblanceolate, obtuse, 3-veined, unornamented, margin entire; lateral sepals slightly oblique. **Petals** free, filiform, 1-veined, apex rounded, margin entire, spreading. **Lip** united to the column, 3-lobed, base deeply cordate; bicallose, the calli prominent, horn-like, laterally compressed, elongate beyond the base of the mid-lobe; disc provided with 3 parallel keels, the mid-keel prominent, very fleshy, disappearing before reaching the apical sinus, the lateral pair somewhat shorter and smaller; lateral lobes falcate-oblong, strongly retrorse, semi-parallel to the apical half of the column, margin irregular; mid-lobe bilobed, with a short isthmus at the base, the apex deeply emarginate, forming a pair of strongly divaricate linear lobes, margin entire. **Column** straight, thin, long, with a pair of prominent, rounded wings at the apex. **Clinandrium-hood** reduced, margin entire. **Anther** obovoid, 4-celled. **Pollinia** 4, "bird-wing" type, strongly laterally compressed, inner pair smaller; caudicles laminar. **Rostellum** sub-apical, slit. **Nectary** shallow, barely penetrating the ovary, slightly inflated, slightly papillose.

OTHER SPECIMENS: See appendix.

DISTRIBUTION AND ECOLOGY: Ranking from southern Colombia to southern Ecuador, along the western slope of the Andes, epiphytic or terrestrial at 1700-3000 m altitude. Flowering throughout the year.

RECOGNITION: *Epidendrum peraltum* belongs to the Pseudepidendrum Group is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, apical inflorescence, lacking a spathaceous bract, the petals filiform and the lip usually 3-lobed, with 3 parallel fleshy keels, the apical lobe often bifurcate, and the pollinia "bird-wing" type and Porphyreum Subgroup which has flowers colored reddish orange, deep purple or lilac-pink, the calli generally prominent, sometimes horn-like. The species is recognized by the large greenish yellow flowers tinged pink to totally dirty pink, sepals 14-16 x 3.5-4 mm, lip with the lateral lobes strongly retrorse, the mid-lobe with a short isthmus, parallel sided, ending in a pair of strongly divaricate, linear lobes, column 13 mm long. *Epidendrum capricornu* Kraenzl. has somewhat shorter plants, the sepals dorsally purple-brown and ventrally yellowish, the lip bluish purple, with the mid-lobe deltate, and the apical pair of lobes horn-like. *Epidendrum porphyreum* Lindl. has purple colored flowers, the disc white, sepals 13-15 x 5-6.5 mm; the lateral lobes of the lip are ovate-dolabriform, not retrorse, and the mid-lobe has a pair of triangular, slightly divaricate lobes. *Epidendrum laeve* Lindl. has somewhat smaller flowers, violet to darl pink, with the calli white; sepals 10-11 x 3-4 mm; lateral lobes of the lip sub-quadrate-dolabriform, only slightly retrorse, column 8-9 mm long. *Epidendrum arnoldi* Schltr. has smaller lilac-pink flowers, sepals 8 mm long, lateral lobes of the lip dolabriform, and the column 6 mm long. *Epidendrum lopezii* Hágsater has the largest flowers, sepals 17-19 mm long, the lip is greenish white with a deep purple splotch in front of the column, and the mid-lobe (which is as long as the lateral lobes), forms a pair of slightly divaricate, apical lobes.



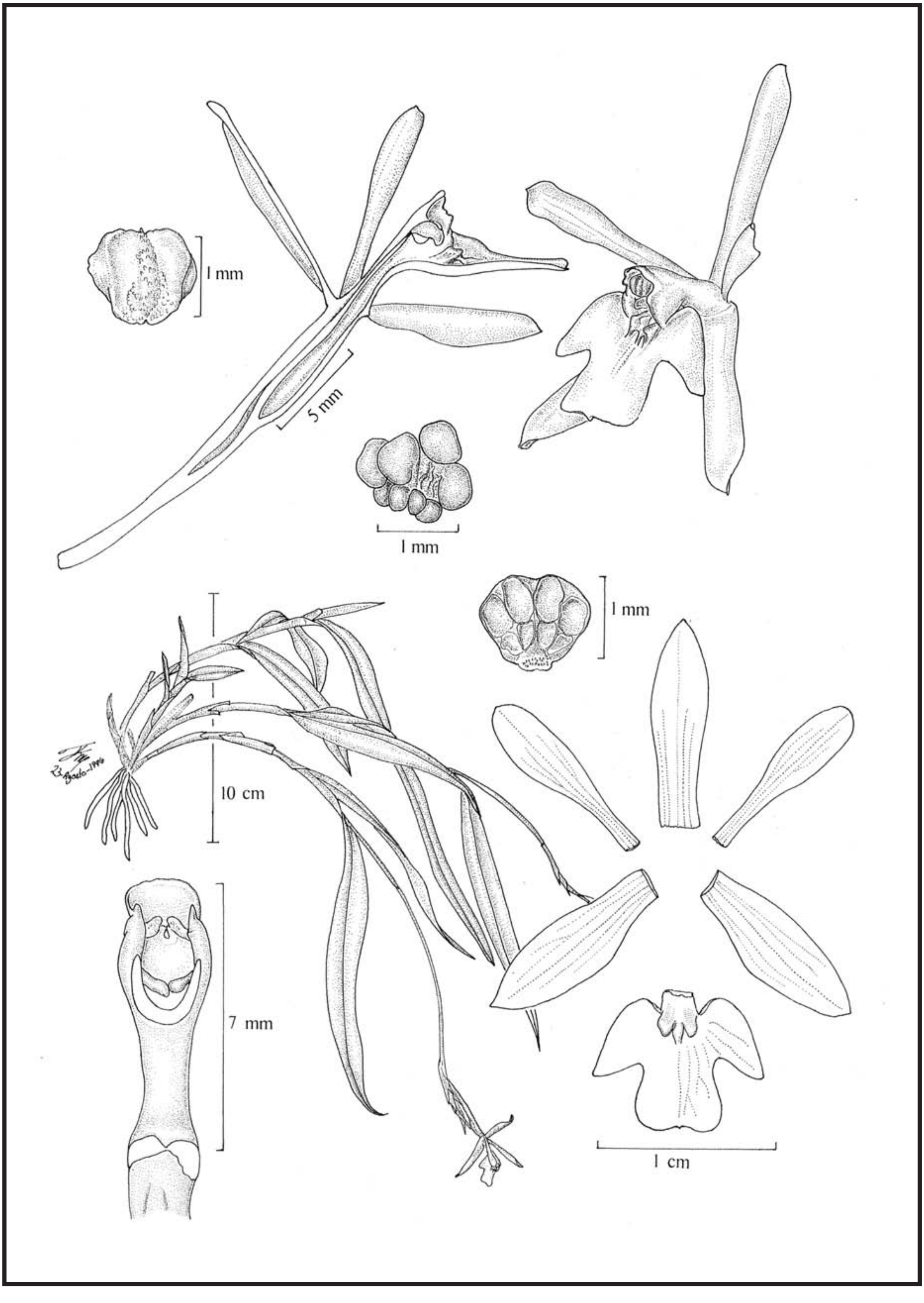
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CONSERVATION STATUS: NT. Apparently common un north-western Ecuador.

ETYMOLOGY: From the Latin *per*-very, completely, and *alte*, high up, in reference to the tall plants, and in replacement of the name used by Lehmann & Kraenzlin, *E. altissimum*.

Authors: E. Santiago & E. Hágsater **Illustrator: M. López R.** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM PERISTERIUM Hágsater & E.Santiago **Plate 1370**

EPIDENDRUM PERISTERIUM Hágsater *et* E.Santiago*, sp. nov.*

Type: COLOMBIA: Cocorná, Hort. by Edwin Granados en Guarne, 1800 m, ***Rodrigo Escobar 5275.*** Holotype: AMO! spirit and slide, AMO!

Epidendro convergente Garay & Dunsterville simile sed floribus leviter majoribus albo-viridulis, labello albo ad basem cordato et columbam volatilem recordante, lobulis lateralibus aliquantum reflexis obtusis, lobulo medio subquadrato differens.

Hierba epífita, simpodial, cespitosa, arqueada, ca. 25 cm de alto. **Raíces** basales, carnosas, delgadas, de ca. 2 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente aplanados, ancipitosos, arqueados, 7-9.5 x 0.2-0.4 cm. **Hojas** 3-4, distribuidas en la mitad apical de los tallos, alternas, articuladas, suberectas, progresivamente más grandes; vainas tubulares, lateralmente aplanadas, ancipitosas, finamente estriadas, 1.7-2.3 x 0.2-0.4 cm; lámina lanceolado-oblonga, acuminada, margen entero, extendido, 7-14.5 x 1-1.3 cm. **Bráctea espatácea** 1, ubicada en el ápice del pedúnculo, lanceolada, cortamente acuminada, tubular en la base y conduplicada en la mitad apical, ancipitosa, similar y mas grande que las brácteas florales, 1.7-1.9 x 0.2-0.3 cm. **Inflorescencia** apical, racemosa en la primera floración, probablemente originando nuevos racimos a lo largo de varias temporadas y entonces pluriracemosa, dística, pauciflora, casi tan larga como la hoja apical, 14.5 cm de largo; pedúnculo alargado, lateralmente aplanado, ancipitoso, bialado, 11.5 cm de largo; raquis corto, totalmente oculto por las brácteas florales, 3 cm de largo. **Brácteas florales** mucho más cortas que el ovario, angostamente elípticas, obtusas, conduplicadas, imbricadas, persistentes en el raquis aún después de la floración, escariosas, 11 x 2 mm. **Ovario** terete, delgado, ligeramente inflado en el 1/3 apical, no ornamentado, 18 mm de largo. **Flores** [4], sucesivas, se produce una a la vez, resupinadas, de color blanco verdoso, el labelo blanco, antera parduzca; sin datos de fragancia. **Sépalos** extendidos, libres, oblanceolados, angostos cerca de la base, obtusos, diminutamente apiculados, 5-nervados, margen entero, revoluto, 11-11.5 x 3.1-3.6 mm; los **laterales** ligeramente oblicuos. **Pétalos** entreabiertos, libres, oblanceolado espatulados, redondeados en el ápice, 3-nervados, margen entero, revoluto, 10 x 2.6 mm. **Labelo** unido a la columna, trilobado, base cordada, margen entero, extendido, 7.3 x 9.4 mm; bicalloso, los callos laminares, algo lateralmente aplanados; disco tricarinado, las carinas bajas y muy cortas; lóbulos laterales oblicuamente ovados, obtusos, 3 x 5 mm; lóbulo medio subcuadrado, muy ligeramente emarginado en el ápice, con un apículo diminuto en el seno, 3.5 x 4.7 mm. **Columna** recta, delgada, algo dilatada hacia el ápice, 7 mm de largo. **Clinandrio** prominente, (sobrepasando levemente el cuerpo de la columna), margen entero. **Antera** ovoide, 8-locular. **Polinios** 8, los 4 superiores lenticulares, lateralmente aplanados, más grandes que los 4 inferiores, los inferiores esféricos, pequeños; caudiculas suaves y granulosas. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** de la mitad del largo de la cavidad estigmática. **Nectario** penetrando 1/3 del ovario. **Cápsula** no vista.

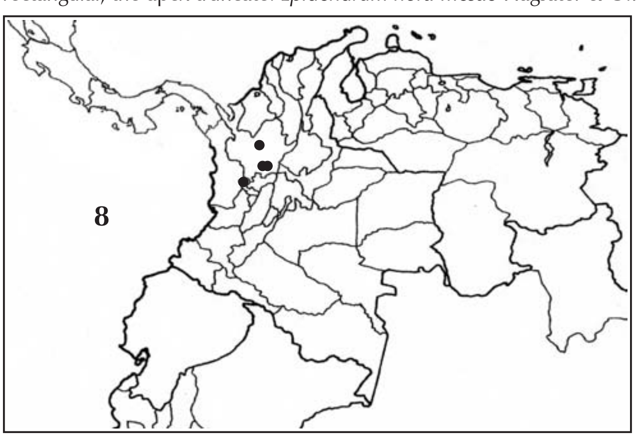
Epiphytic, sympodial, caespitose, arching **herb**. **Roots** basal, fleshy, thin. **Stems** simple, cane-like, laterally compressed, ancipitose, arching. **Leaves** 3-4, distributed along the apical half of the stem, alternate, articulate, sub-erect, progressively larger; sheaths tubular, laterally compressed, ancipitose, minutely striated; blade oblong-lanceolate, acuminate, margin entire, spreading. **Spathaceous bract** 1, at the apex of the peduncle, lanceolate, short-acuminate, base tubular, conduplicate along the apical half, ancipitose, similar to the floral bracts which are smaller and imbricate. **Inflorescence** apical, racemose on first flowering, probably producing new racemes over the years and then pluriracemose, distichous, few-flowered, longer than the apical leaf; peduncle elongate, laterally compressed, ancipitose, two-winged; rachis short, totally hidden by the floral bracts. **Floral bracts** much shorter than the ovary, narrowly elliptic, obtuse, conduplicate, imbricate, persistent on the rachis after flowering, scarious. **Ovary** terete, thin, slightly inflated along the apical 1/3, smooth. **Flowers** [4], successive, produced one at a time, resupinate, greenish white, the lip white, anther brownish. **Sepals** spreading, free, oblanceolate, narrow near the base, obtuse, minutely apiculate, 5-veined, margin entire, revolute; lateral sepals slightly oblique. **Petals** partly spreading, free, oblanceolate-spathulate, apically rounded, 3-veined, margin entire, revolute. **Lip** united to the column, 3-lobed, base cordate, margin entire, spreading; bicallose, the calli laminar, somewhat laterally flattened; disc 3-keeled, the keels low and very short; lateral lobes obliquely ovate, obtuse; mid-lobe sub-quadrate, apex slightly emarginate, with a minute apicule in the sinus. **Column** straight, thin, somewhat dilated towards the apex. **Clinandrium-hood** prominent (slightly surpassing the body of the column), margin entire. **Anther** ovoid, 8-celled. **Pollinia** 8, the upper 4 lentil-shaped, laterally compressed, larger than the lower 4 which are spherical, small, caudicles soft and granulose. **Rostellum** sub-apical, slit. **Nectary** penetrating 1/3 of the ovary.

OTHER SPECIMENS: COLOMBIA: Antioquia: road N of Ventanas, 1800 m, 16 III 1989, *Dalström 1296*, SEL! Aquitania, Finca La Ilusión, 1200-1500 m, 2 IV 1992, *Fonnegra 4138,* COL!

OTHER RECORDS: COLOMBIA: Photo as *Epidendrum churunense* 1. [POV] (Ortiz, 2007). **Antioquia:** Photo as *Epidendrum convergens*, (Escobar, 1994). Cerca de San Luis, *Escobar 782*, note and photo (Garay, 1971). Without locality, cult. by E. Granada en Guarne, 1800 m, *Escobar 5208*, slide and spirit, AMO! Photo, hort. Medellín, *Duque 35*, AMO! Photos and note, *Duque 332*, AMO! Río Viao, January 1995, Hort. Colomborquídeas, *Hágsater 11539*, spirit, AMO! (Illustration voucher).

DISTRIBUTION AND ECOLOGY: Apparently common on the plateau north and east of Medellín on the Cordillera Central in northern Colombia; epiphytic at 1200-1800 m altitude. Flowering throughout the year.

RECOGNITION: *Epidendrum peristerium* belongs to the Albertii Group which is characterized by the sympodial habit, laterally compressed to ancipitose or somewhat fusiform-thickened stems, the apical or apical and lateral racemose, distichous inflorescence more or less with imbricating bracts on the peduncle, producing one flower at a time, and the Allenii Subgroup which is characterized by the stems with numerous leaves, the apical inflorescence (rarely lateral), peduncle elongate, bare, non-bract bearing, two-winged, the rachis short, covered by rounded, usually imbricating, bracts, and the Convergens Complex which has a 3-lobed lip and 8 pollinia. The species is recognized by the greenish white flowers with a white lip, sepals 11-11.5 mm long and the base of the lip cordate, the lateral lobes obliquely ovate and the mid-lobe sub-quadrate. *Epidendrum convergens* Garay & Dunsterville has greenish brown flowers, with a pinkish hue, sepals 8.5 mm long, the base of the lip cuneate, the lateral lobes obliquely triangular, acuminate, and the mid-lobe oblong-rectangular, the apex truncate. *Epidendrum nora-mesae* Hágsater & O.Pérez has larger green flowers, the sepals 14-21 mm long, the lateral lobes of the lip semi-ovate, and the midlobe obcuneate. *Epidendrum churunense* Garay & Dunsterville has a 3-lobed lip, but only 4 pollinia.



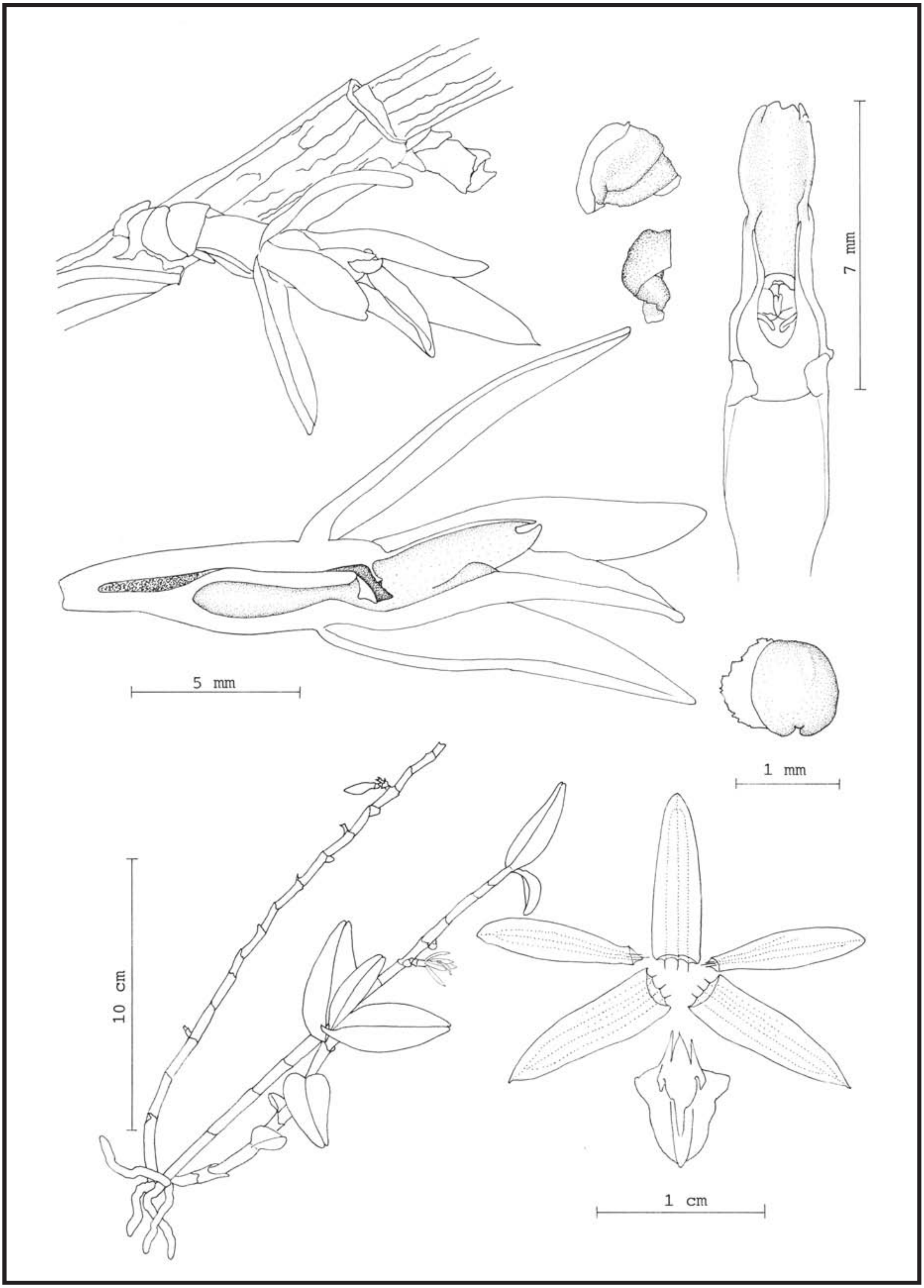
NOTE: This complex of three species which includes *Epidendrum convergens*, *E. nora-mesae*, and *E. peristerium*, is unusual in the genus in having 8 pollinia, where most species have only 4, and a small number of species in various groups only has 2.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek περιστερι, dove-like, in reference to the shape of the lip in natural position which is reminiscent of a dove in flight.

REFERENCES: Escobar R., 1994, **Orquideas Nativas de Colombia** 5: 769 fig. 898, Colina Ed., Medellín, Colombia. Garay, L., 1971, Orquídeas Colombianas Nuevas o Criticas Decena VII, **Orquideología** 6(1): 16. Ortiz V., Pedro & Carlos Uribe V., 2007, **Galería de Orquídeas de Colombia**, CD, Da Vinci Editores, Bogotá, Colombia.

Authors: E. Hágsater & E. Santiago **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM PHRAGMITOIDES Hágsater **Plate 1371**

EPIDENDRUM PHRAGMITOIDES Hágsater, *sp. nov.*

Type: COLOMBIA: Valle del Cauca: abajo de Queremal, cerca del río arriba de Anchicayá, 800 m, pressed cult. 1 August 1983, ***Eric Hágsater, Robert Dressler, Kerry Dressler & James Folsom 7362***. Holotype (a single flower): AMO! (Illustration voucher).

Epidendro phragmites Heller & L.O.Williams simile sed habitu minore, foliis brevioribus, inflorescentia uniflora, sepalis 10 mm longis, labello lobulos binos parvos late triangulares ferenti, clinandrio columnae corpore fere bis longiore distinctum.

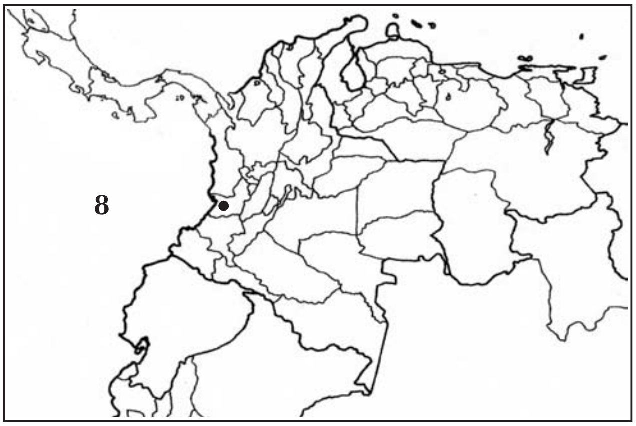
Hierba epífita, simpodial, cespitosa, de más de 20 cm de alto. **Raíces** basales, carnosas, delgadas, ca. 3 mm de grosor. **Tallos** tipo caña, sencillos, teretes, rectos, verdes, ca. 20 x 0.3-0.5 cm; cubiertos en la base por vainas tubulares no foliares, 12 x 5 mm. **Hojas** numerosas, distribuidas a lo largo del tallo, sólo 2 persistentes en el ápice del tallo, articuladas, suberecto extendidas, desiguales en tamaño (las basales y la apical más pequeñas); vainas tubulares, escariosas, finamente estriadas y algo rugosas, 1-2 cm de largo; lámina ovado elíptica a lanceolada, obtusa, bilobada, coriácea, 2-5 x 1-2 cm. **Bráctea espatácea** ausente. **Inflorescencias** laterales, producidas en la base los internodos a través de las vainas foliares, subsésiles; pedúnculo muy corto, ca. 5 mm de largo, oculto en su totalidad por 2-3 brácteas cortas, tubulares, imbricadas, 2-3 mm de largo. **Brácteas florales** más cortas que el ovario, tubulares, ca. 2 mm de largo. **Flores** 1, de color verde; sin datos de fragancia. **Ovario** terete, engrosado, algo inflado ventralmente en la mitad apical, 6 mm de largo. **Sépalos** entreabiertos, libres, oblongo lanceolados, ligeramente cóncavos, obtusos, margen extendido, entero, 10 x 3 mm; el **dorsal** 3-nervado; los **laterales** 5-nervados, diminutamente apiculados. **Pétalos** entreabiertos, libres, angostamente oblanceolados, obtusos, 3-nervados, margen extendido, entero, 9.5 x 2 mm. **Labelo** unido a la columna, subentero, truncado en la base y con el ápice subobtuso, margen entero, extendido, 6 x 5.5 mm; bicalloso, los callos laminares, prominentes, casi tocándose entre sí en posición natural; disco unicarinado, la carina prominente, carnosa, que se prolonga algo más allá del ápice de la lámina; lóbulos laterales pequeños e incipientes, anchamente triangulares, obtusos, abrazando ligeramente a la columna en posición natural, 1.3 x 2.3 mm; lóbulo medio anchamente subtriangular, diminutamente apiculado, 4 x 4 mm. **Columna** muy corta, gruesa, 7 mm de largo (incluyendo el clinandrio). **Clinandrio** muy prominente, sobrepasando el cuerpo de la columna, arqueado hacia arriba, semitubular, margen apical eroso. **Antera** subreniforme, 4 locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, tan largas como los polinios. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** prominentes, casi del largo total de la cavidad estigmática. **Nectario** penetrando cerca de la mitad del ovario, amplio, ligeramente inflado, no ornamentado. **Cápsula** no vista.

Epiphytic, sympodial, caespitose **herb. Roots** basal, fleshy, thin. **Stems** cane-like, simple, terete, straight, green; the base covered with non-foliar, tubular sheaths. **Leaves** numerous, distributed throughout the stem, only 2 persistent at the apex of the stem, articulate, sub-erect-spreading, unequal in size (the basal and apical leaves smaller); sheaths tubular, scarious, minutely striated and somewhat rugose; blade ovate-elliptic to lanceolate, obtuse, bilobed, coriaceous. **Inflorescences** lateral, produced from the base of the internodes through the foliar sheaths, sub-sessile, peduncle very short, totally hidden by 2-3 short, tubular, imbricating bracts. **Floral bracts** shorter than the ovary, tubular. **Flower** single, green. **Ovary** terete, thickened, somewhat ventrally inflated along the apical half. **Sepals** partly spreading, free, oblong-lanceolate, slightly concave, obtuse, margin spreading, entire; dorsal sepals 3-veined, lateral sepals 5-veined, minutely apiculate. **Petals** partly spreading, free, narrowly oblanceolate, obtuse, 3-veined, margin entire, spreading. **Lip** united to the column, sub-entire, base truncate, apex sub-obtuse, margin entire, spreading; bicallose, the calli laminar, prominent, nearly touching each other in natural position; disc 1-keeled, the keel prominent, fleshy, prolonged slightly beyond de apex of the lip; lateral lobes widely sub-triangular, minutely apiculate. **Column** very short, thick. **Clinandrium-hood** very prominent, surpassing the body of the column, arching upwards, semi-tubular, apical margin erose. **Anther** sub-reniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed, caudicles soft and granulose, as long as the pollinia. **Rostellum** sub-apical, slit. **Nectary** penetrating about half the ovary, wide, slightly inflated, smooth.

OTHER SPECIMENS: None seen.

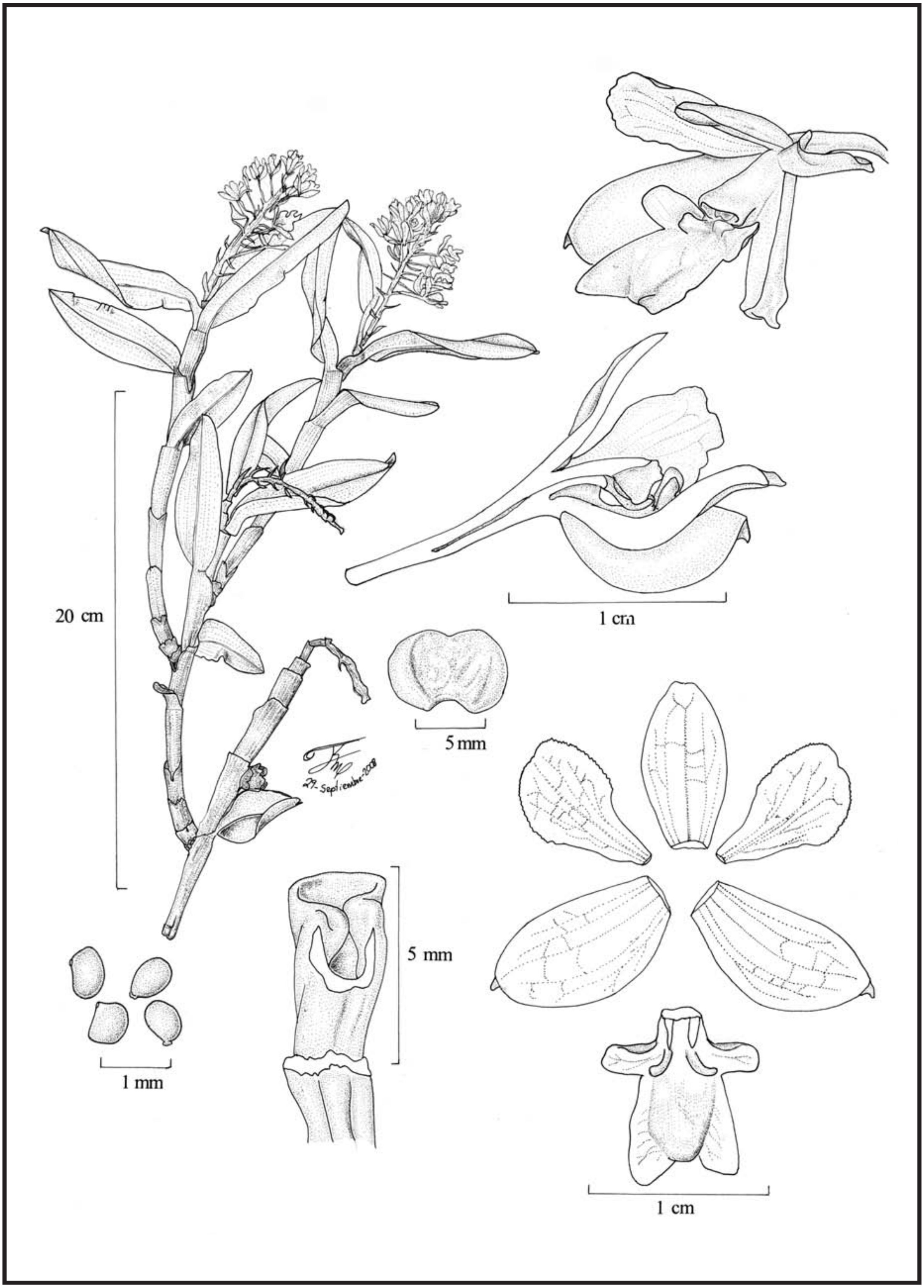
DISTRIBUTION AND ECOLOGY: Known only from the type locality in southern Colombia, on the western slopes of the Cordillera Occidental, epiphytic at 800 m altitude. Flowering in August.

RECOGNITION: *Epidendrum phragmitoides* belongs to the Pleuranthium Group, characterized by the caespitose habit, cane-like and elongate stems, several short, lateral inflorescences, and the Phragmites Subgroup which has non-branching stems, sub-sessile, 1 or 2 flowered inflorescences, the flowers green or yellowish green, the ovary somewhat inflated and nearly hidden by 2-4 tubular, imbricating bracts. The species is recognized by the short, ovate-elliptic to lanceolate leaves 2-5 x 1-2 cm; single flowered inflorescence, the flower green, sepals oblong-lanceolate, 10 mm long, the lip sub-entire, with a pair of small, widely triangular lateral lobes that embrace the column in natural position; the clinandrium-hood prominent, nearly twice as long as the body of the column. *Epidendrum phragmites* Heller & L.O.Williams has larger leaves, 4-8 x 1.5-4 cm; the inflorescence has 2 greenish yellow to pale green flowers, sepals 12-13.7 mm long, the lip generally entire, 8-11 mm long, with the prominent clinandrium-hood as long as the body of the column. *Epidendrum lilijae* Foldats has linear-lanceolate, acute leaves, lateral sepals connate at the base, 8 mm long, and a short clinandrium-hood, which does not surpass the body of the column. *Epidendrum leonii* D.E. Benn. & Christenson has lanceolate leaves 8.5-9 x 1.6-1.8 cm; a short clinandrium-hood, which does not surpass the body of the column; a 2-flowered inflorescence, sepals, lanceolate, acute, and the lip clearly 3-lobed, with a prominent clinandrium-hood, and the apical margin dentate.



CONSERVATION STATUS: DD. Data deficient. This unattractive species is known only from the type.

ETYMOLOGY: From the Greek φραγμα, fence, and the ending -οιδεσ, resemblance, in reference to the similarity of this species with *E. phragmites*, which refers to the cane-like stems.



EPIDENDRUM PLATYTROPIS Hágsater & E.Santiago **Plate 1372**

EPIDENDRUM PLATYTROPIS Hágsater *et* E.Santiago, *sp. nov.*

Type: ECUADOR: Azuay: above Sigsig, 3000 m, 6 May 1981, ***Janet & Lee Kuhn, & Carlyle & Jane Luer 61.***

Holotype: SEL! (Illustration voucher)

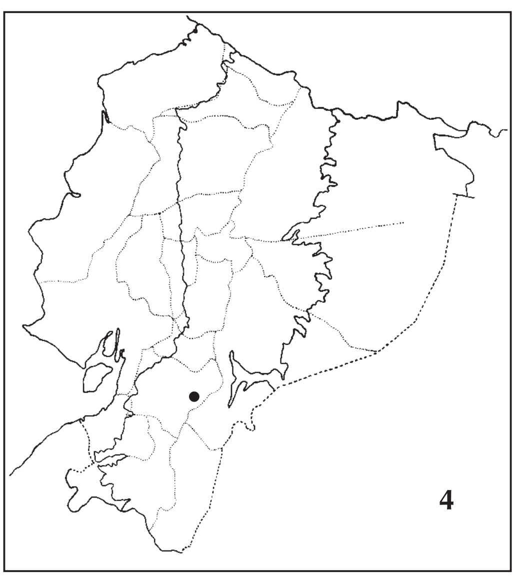
Epidendro lawessonii Hágsater & Dodson simile sed inflorescentia pluriflora densa, floribus minoribus, columna cum clinandrio prominente, labello late emarginato, callis laminaribus divaricatis, disco cum carina latissima carnosa plus quam lubuli medii latitudinis dimidium occupanti.

Hierba terrestre, erecta, monopodial, ramificada, de 120 cm de alto. **Raíces** no vistas. **Tallos** tipo caña, partiendo de un tallo principal, ramificaciones sucesivas alternas, teretes; el principal no visto, las ramificaciones, 12-14 x 0.3-1.0 cm; con 3-4 vainas tubulares, no foliosas, estriadas, rugosas, 3-20 mm de largo. **Hojas** 5-6, distribuidas en los 2/3 apicales del tallo, subcoriáceas, alternas, articuladas, desiguales en tamaño (la basal más pequeña); vaina tubular, estriada, rugosa, 0.5-3.5 x 0.35-1.0 cm; lámina angostamente elíptica, obtusa, margen entero, 1.5-8 x 1-2 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, arqueada, florece una sola vez, pluriflora, subdensa, 5.5-6 cm de largo; pedúnculo corto, algo lateralmente aplanado, 1-1.5 cm de largo; provisto en la parte media de una bráctea triangular lanceolada, 8-9 mm de largo. **Brácteas florales** de la mitad del largo del ovario, linear triangulares, acuminadas, abrazadoras, 5-7 mm de largo. **Flores** 25, simultáneas, resupinadas, de color verde tornándose amarillentas con la edad; sin datos de fragancia. **Ovario** terete, delgado, no inflado, no ornamentado, 12-15 mm de largo. **Sépalos** entreabiertos, libres, carnosos, elípticos, redondeados, 5-nervados, margen entero, extendido, el **dorsal** 9 x 5 mm; los **laterales** ligeramente oblicuos, dorsalmente aristados, 11 x 5.6 mm. **Pétalos** entreabiertos, libres, obovado espatulados, redondeados, 3-nervados, margen apical finamente eroso, las nervaduras laterales cortamente ramificadas, 9 x 5 mm. **Labelo** unido a la columna, trilobado, base ligeramente cordada, margen entero, 8 x 9 mm; bicalloso, los callos laminares, algo lateralmente comprimidos, divaricados; disco con una carina central muy ancha, baja, redondeada, alargada hasta el seno apical; lóbulos laterales pequeños, extendidos, formando un ángulo recto con respecto del lóbulo medio, rectangulares, el margen posterior involuto; 3 x 1.6 mm; lóbulo medio anchamente obcuneado, ampliamente emarginado, anchamente apiculado; 6.2 x 6.2 mm, el ápice forma un par de lóbulos oblicuamente redondeados. **Columna** recta, engrosada, 5 mm de largo. **Clinandrio** prominente (aunque sin sobrepasar el cuerpo de la columna), margen entero. **Antera** reniforme, 4-locular. **Polinios** 4, obovoides, algo lateralmente aplanados. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** de la mitad de largo de la cavidad estigmática. **Nectario** poco profundo, sin penetrado el ovario, no ornamentado. **Cápsula** no vista.

Terrestrial, erect, monopodial, branching **herb. Roots** not seen. **Stems** a prominent main stem with successive, alternate branching, cane-like, the branches shorter than the main stem, with 3-4 non-foliar, tubular, striated, rugose sheaths. **Leaves** 5-6, distributed along the apical 2/3 of the stems, sub-coriaceous, articulate, unequal in size (the basal leaf smaller); sheath tubular, striated, rugose; blade narrowly elliptic, obtuse, margin entire. **Inflorescence** apical, racemose, arching, flowering only once, densely many-flowered; peduncle short, somewhat laterally compressed, provided in the middle with a triangular-lanceolate bracts. **Floral bracts** half as long as the ovary, linear-triangular, acuminate, amplexicaul. **Flowers** 25, simultaneous, resupinate, green, turning yellowish with age. **Ovary** terete, thin, not inflated, smooth. **Sepals** partly spreading, free, fleshy, elliptic, rounded, 5-veined, margin entire, spreading; the dorsal sepal slightly smaller than the oblique lateral sepals with are dorsally aristate. **Petals** partly spreading, free, obovate-spatulate, rounded, 3-veined, lateral veins short-branched, apical margin minutely erose. **Lip** united to the column, 3-lobed, base slightly cordate, margin entire; bicallose, the calli laminar, somewhat laterally compressed, divaricate; disc with a very wide fleshy, low rounded keel, reaching the apical sinus; lateral lobes spreading, forming a right angle with respect to the mid-lobe, rectangular, the posterior margin involute; mid-lobe widely obcuneate, widely emarginate, with a wide apicule in the sinus, the emarginate apex forming a pair of obliquely rounded lobes. **Column** straight, thickened. **Clinandrium-hood** prominent, without surpassing the body of the column, margin entire. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, somewhat laterally compressed. **Rostellum** sub-apical, slit. **Nectary** shallow, without penetrating the ovary, smooth.

OTHER SPECIMENS: None seen.

DISTRIBUTION AND ECOLOGY: Known only from the upper eastern slopes of the Andes in central Ecuador, terrestrial at 3000 m altitude. Flowering in May.

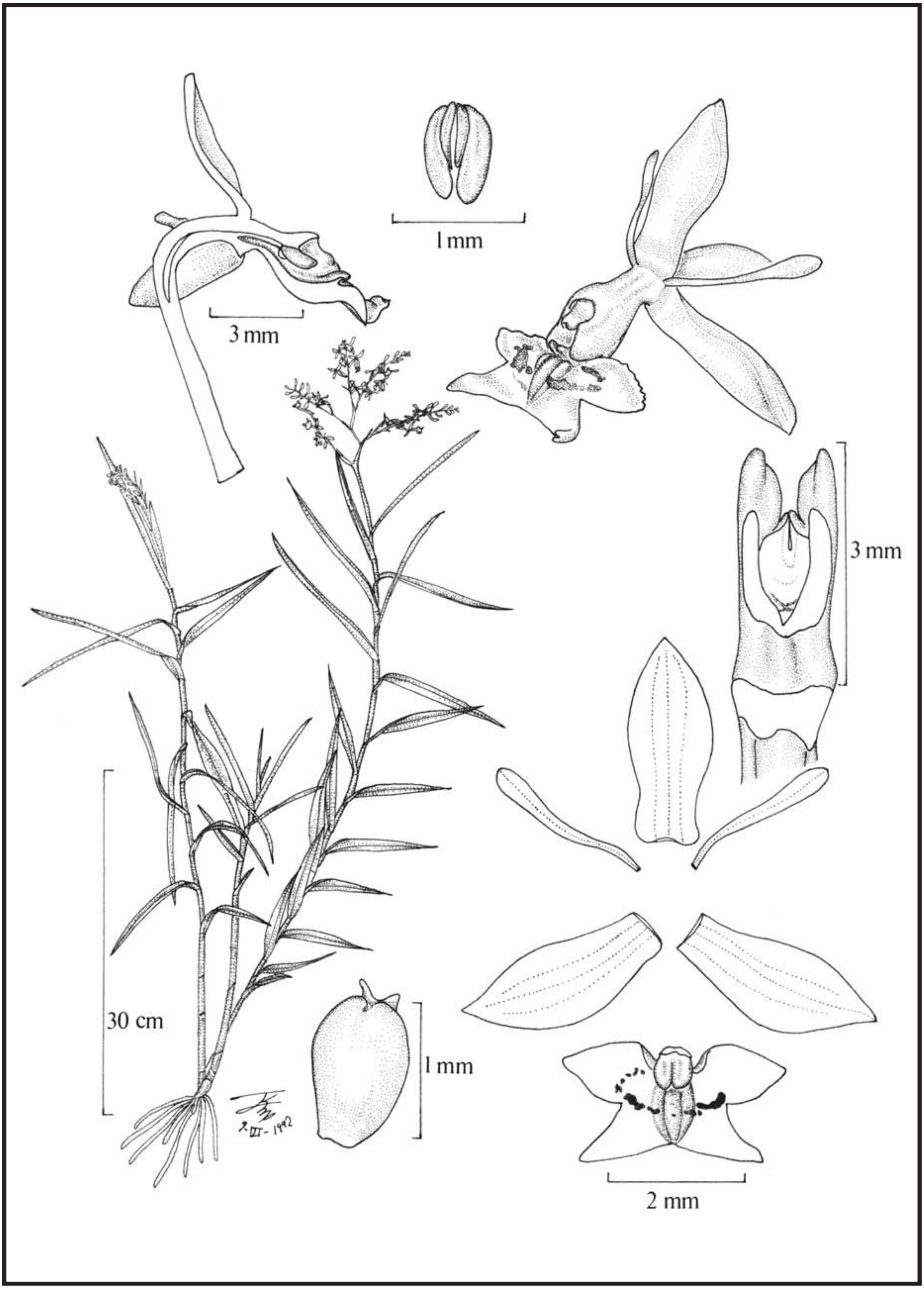


RECOGNITION: *Epidendrum platytropis* belongs to the Andean Group, and Cernuum Subgroup, characterized by the monopodial, branching habit, long, erect, cane-like main stem with subapical branching, leaves sub-coriaceous, with the apex obtuse and the 3-lobed lip and the prominent clinandrium-hood funnel-shaped. The species is recognized by the narrowly elliptic leaves, 1.5-8 x 1-2 cm; arching inflorescence with green flowers, sepals 9-11 mm long, 3-lobed lip, the lateral lobes small, rectangular, forming a right angle with the mid-lobe which is obcuneate, with a very wide, fleshy, low keel, clinandrium-hood prominent, entire. *Epidendrum lawessonii* is vegetatively very similar, but the inflorescences are fewer-flowered, flowers white, larger, sepals 17-19 mm long, and the lateral lobes of the 3-lobed lip sub-orbicular and retrorse, the column has a pair of prominent lateral, sub-quadrate wings. *Epidendrum sigsigense* Hágsater & Dodson has larger elliptic leaves (9-11 x 3-3.5 cm), pendent inflorescences with cream-colored flowers, sepals 14-18 mm long, 3-lobed lip with the lateral lobes dolabriform, as large as the mid-lobe with is deeply emarginate, forming a pair of sub-quadrate lobes with the apical margin crenate.

CONSERVATION AND STATUS. DD. Data deficient.

ETYMOLOGY: From the Greek πλατυς, wide, and τροπις, keel, in reference the the characteristic very wide fleshy, low keel of the lip, with is more and half the width of the mid-lobe.

Authors: E. Hágsater & E. Santiago **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM POEPPIGII Hágsater **Plate 1373**

EPIDENDRUM POEPPIGII Hágsater, Orquídea (Mexico City) 13(1-2): 217. 1993.

Basionym: *Epidendrum gratiosum* Rchb.f. var. *linearifolium* Cogn., Mart. Fl. Bras. 3 (5): 166. 1898. Lectotype: (here designated): PERU: Cuchero, Dec. 1829, ***Poeppig 1603*.** W-R (s.n.; Amo-Data 34008)! tracing and photo at AMES! Isolectotypes: W-R (s.n.; Amo-Data 36131)! W-R 49554! (the fragments on the upper left hand corner, with description in Reichenbach's handwriting) G 25445! photo at AMES! F!

Synonym: *Epidendrum paniculatum* Ruiz & Pavón var. *linearifolium* (Cogn.) C.Schweinf., Bot. Mus. Leafl. 11: 105. 1944. Non *Epidendrum linearifolium* Hook., Bot. Mag. t. 4572. 1851.

Hierba epífita, cespitosa, erecta, 30-68 cm de alto. **Raíces** basales, carnosas, delgadas, 1-3 mm de grosor. **Tallos** sencillos, tipo caña, ligeramente comprimidos lateralmente, erectos, 25-50 x 0.2-0.6 cm; cubiertos en la base por vainas tubulares no foliares, escariosas y fibrosas con el tiempo, 5.5 cm de largo. **Hojas** 8-17, distribuidas en la mitad apical del tallo, erectas, alternas, articuladas; vaina tubular, finamente estriada, 1-3 x 0.2-0.6 cm; lamina linear, acuminada, margen entero, [4.5]10-22 x 0.4-1.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, incipientemente paniculada, pauciflora, laxa, 10-20 cm de largo; pedúnculo delgado, recto, 4.5-7 cm de largo; provisto en la parte media de una bráctea prominente, tubular, conduplicada, 2-4 cm de largo; raquis con 1 a 4 racimos cortos, 4-15 cm de largo; la base de cada racimo con una bráctea linear triangular, largamente acuminada, 1-6 cm de largo. **Brácteas florales** mucho mas cortas hasta casi tan largas como el ovario, angostamente triangulares, acuminadas, abrazadoras, 2-8 [11] mm de largo. **Flores** 18-70, sucesivas, resupinadas, de color verde con el labelo blanco, frecuentemente con un anillo de puntos morados alrededor del disco; sin datos de fragancia. **Ovario** terete, delgado, algo dilatado en la mitad apical, 8-10 mm de largo. **Sépalos** fuertemente reflexos, libres, carnosos, angostamente oblanceolados, agudos, 3-nervados, margen entero, extendido, 5 x 2 mm; los **laterales** oblicuos. **Pétalos** reflexos, linear filiformes, ligeramente dilatados hacia el ápice, ápice redondeado, 1-nervados, margen entero, extendido, 4.5 x 0.2 mm. **Labelo** unido a la columna, trilobado, con la base truncada, ca. 2.5 x 4 mm; bicalloso, los callos pequeños, subglobosos; disco tricarinado, las carinas alargadas hasta el seno apical; lóbulos laterales oblongo ovados, obtusos, ca. 2 x 1.5 mm; lóbulo medio bilobado, los lóbulos triangulares, fuertemente divaricados, cada lóbulo de ca. 1.5 x 1 mm. **Columna** corta, gruesa, 3 mm de largo. **Clinandrio** corto, margen entero. **Antera** 4-locular, ovoide, basalmente bidentada. **Polinios** 4, tipo ala de pájaro; desiguales en tamaño, el par interior más pequeño; caudículas no vistas. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** muy pequeños. **Nectario** poco profundo, sin penetrar el perianto, no inflado, no ornamentado. **Cápsula** angostamente elipsoide, 30 x 4 mm; pedicelo delgado, terete, 6 mm de largo; cuerpo 20 x 4 mm; cuello apical con el perianto persistente, 4 mm de largo.

Epiphytic, caespitose, erect **herb**. **Roots** basal, fleshy, thin. **Stems** simple. Cane-like, slightly laterally compressed, erect; the base covered by tubular, non-foliar, scarious sheaths, becoming fibrous with time. **Leaves** 8-17, distributed throughout the upper half of the stem, erect, alternate, articulate; sheaths tubular, minutely striated; blade linear, acuminate, margin entire, spreading. **Spathaceous bract** lacking. **Inflorescence** apical, somewhat paniculate, lax, few-flowered; peduncle thin, straight, provided in the middle with a prominent tubular, conduplicate bract. **Floral bracts** shorter to about as long as the ovary, narrowly triangular, acuminate, amplexicaul. **Flowers** 18-70, successive, resupinate, green with the lip and apex of the column white, frequently with a ring of purple dots surrounding the disc. **Ovary** terete, thin, somewhat dilated along the apical half, long. **Sepals** strongly reflexed, free, fleshy, narrowly oblanceolate, acute, 3-veined, margin entire, spreading; the lateral sepals oblique. **Petals** reflexed, linear-filiform, slightly dilated towards the rounded apex, 1-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base truncate; bicallose, the calli small, sub-globose; disc 3-keeled, the keels elongate to the apical sinus; lateral lobes oblong-ovate, obtuse; mid-lobe bilobed, the lobes triangular, strongly divaricate. **Column** short, thick. **Clinandrium-hood** short, margin entire. **Anther** 4-celled, ovoid, basally bidentate. **Pollinia** 4, “bird-wing” type, unequal in size, the inner pair smaller. **Rostellum** sub-apical, slit. **Nectary** short, without penetrating the ovary, not inflated, smooth. **Capsule** narrowly ellipsoid, the short pedicel thin, apical neck short, with persistent perianth.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Ranging along the Eastern slope of Andes from southern Ecuador to southern Peru, epiphytic, growing at [800-1000] 1500-2800 m altitude. Flowering from October to April (in cult in Mexico in May-June).

RECOGNITION: *Epidendrum poeppigii* belongs to the Pseudepidendrum Group is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, apical inflorescence, lacking a spathaceous bract, the petals filiform and the lip usually 3-lobed, with 3 parallel fleshy keels, the apical lobe often bifurcate, and the pollinia “bird-wing” type and Paniculatum Group which has bicolor flowers (generally green with the lip and apex of the column white) the disc sometimes marked with purple to red. The species is recognized by the small plants (to 68 cm tall), thin stems and narrow, linear, long acuminate leaves; the successive flowers have 5 mm long, strongly reflexed sepals, the lip bicallose the column short and thick, 3 mm long. *Epidendrum yungasense* Rolfe has somewhat smaller plants (ca. 40 cm tall), but the arching-pendent stems producing kiekies, the leaves oblong-lanceolate, acute, simultaneous flowers and the column thin, 5-6 mm long. *Epidendrum parviflorum* Ruiz & Pavón has narrowly lanceolate, acute leaves, simultaneous flowers, spreading sepals, and the lip with a single callus and lateral and apical lobes rounded. *Epidendrum patulipetalum* Schltr. has small plants, (ca. 35 cm tall) with linear-lanceolate, short leaves (5-7 cm long), partly spreading sepals 5 mm long, and the lip partly embracing the column in natural position, bicallose, with prominent, thin calli.

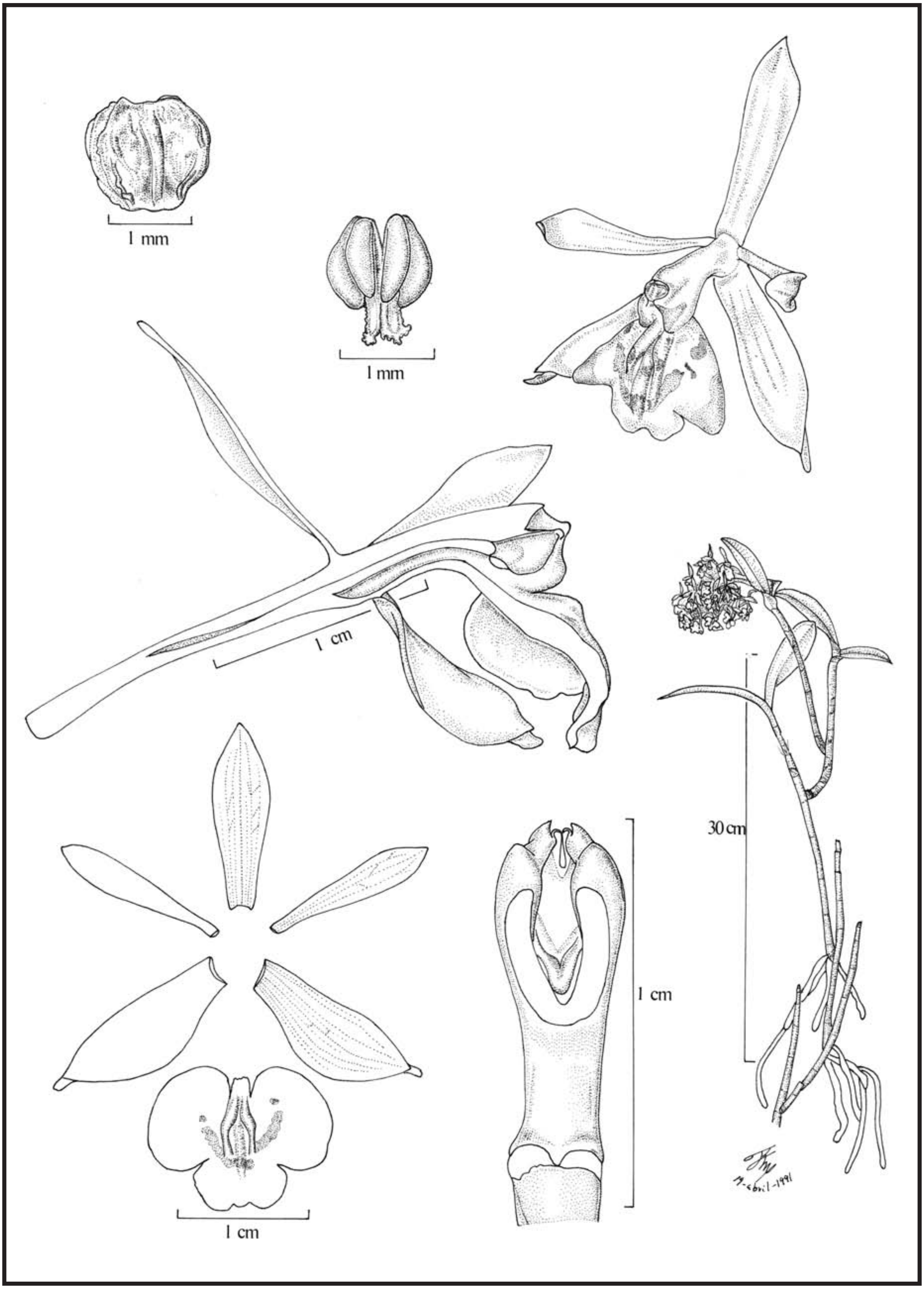


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CONSERVATION STATUS: DD. Data Deficient.

ETYMOLOGY: In honor of Eduard Friedrich Poeppig, (July 16, 1798-September 4, 1868) was a German botanist, zoologist and explorer who was born in Plauen. In 1826 he departed for Valparaiso, Chile, and spent several years performing scientific exploration throughout Chile, Peru and Brazil. He described over 4,000 plant species, investigated Incan ruins, and travelled the length of the Amazon River by raft and canoe; he was only the third European to make the entire 5,000 kilometer river journey.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM POLYCHROMUM Hágsater **Plate 1374**

EPIDENDRUM POLYCHROMUM Hágsater, Orquídea (Mexico City) 7(3):155. 1979.

Type: SAN SALVADOR: [Chalatenango:] Cerro Montecristo-Los Planes, 2000 m, 12 April 1977, pressed 12 November 1977, ***F. Hamer 622***. Holotype: AMO! Clonotype: 19 April 1977, AMES! (Color photo of live plant at AMO!) The date of the published llustration by Hamer, IX (September) 1977, does not coincide with the preparation of any of the specimens.

Hierba terrestre y epífita, simpodial, erecta, donde cada tallo nuevo se origina de un entrenudo intermedio subapical del tallo anterior, de un poco más de 100 cm de alto. **Raíces** basales, tanto en la base de la planta como en la base de los tallos superiores, carnosas, gruesas, blancas, 2.5-3.0 mm de grosor. **Tallos** sencillos, tipo caña, teretes, erectos, rectos, 8-16 x 0.3-0.45 cm. **Hojas** 2-3, agrupadas en el ápice de cada tallo, alternas, articuladas; vainas tubulares, finamente estriadas, las inferiores desprovistas de lámina, ligeramente infladas, escariosas y fibrosas con el tiempo, 0.5-3.0 x 0.3-0.8 cm; lámina elíptica, subaguda, subcoriácea, margen entero, 3.0-15 x 1.2-3.4 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, arqueado nutante, densa, 8.0-10 cm de largo; pedúnculo lateralmente aplanado, 1.0-2.0 cm de largo, provisto en la base de 1 bráctea angostamente triangular, aguda, abrazadora, 12 mm de largo; raquis lateralmente aplanado, recto. **Brácteas florales** de menos de la mitad de largo del ovario, angostamente triangulares, acuminadas, abrazadoras, gradualmente más cortas, 6.0-11 mm de largo. **Flores** 30-33, simultáneas, resupinadas, policromas; sépalos y pétalos púrpura o pardo rojizos, con los márgenes blanco cremosos; labelo blanco cremoso o rosado, con un anillo de líneas cortas púrpuras al rededor del disco; la columna teñida ligeramente de rosado; sin datos de fragancia. **Ovario** terete, delgado, liso, no inflado, 15-30 mm de largo. **Sépalos** libres, extendidos, ligeramente cóncavos en la mitad apical, lanceolados, agudos, 6-nervados, carnosos, margen entero, 10-14 x 3.5-4.3 mm; los **laterales** ligeramente oblicuos, con una quilla dorsal prominente. **Pétalos** extendidos, libres, ligeramente arqueados en la mitad apical, angostamente oblanceolados, agudos, 3-nervados, margen entero, ligeramente revoluto en la mitad basal, 9.0-13 x 2.0-3.0 mm. **Labelo** unido a la columna, profundamente cordado en la base, trilobado, margen ligeramente eroso, 9.5-10 x 12-14 mm; bicalloso, los callos prominentes, delgados; disco provisto de tres quillas, delgadas, lisas, alargadas hasta la mitad de la lámina; lóbulos laterales transversalmente elíptico suborbiculares, 4.5 x 8.0 mm; lóbulo medio bilobado, 2.5 x 5.5 mm, los lóbulos pequeños, redondeados, separados por un seno profundo con un mucrón ancho. **Columna** recta, delgada en la base, dilatada hacia la mitad apical, 8 mm de largo. **Clinandrio** corto, margen entero. **Antera** ovoide, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas más largas que los polinios; viscidio semilíquido. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** penetrando ligeramente el ovario, justo detrás del perianto, no inflado, liso. **Cápsula** no vista.

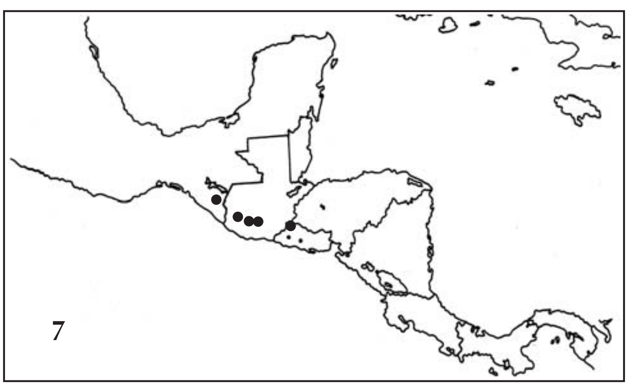
Terrestrial and epiphytic, simpodial, erect **herb** where the new stem originates from an intermediate, sub-apical internode of the previous stem. **Roots** basal, from the base of the plant as well as from the base of the upper stems, fleshy, thick, white. **Stems** simple, cane-like, terete, erect, straight. **Leaves** 2-3, aggregate towards the apex of the stem, alternate, articulate; sheaths tubular, minutely striated, the lower ones non fallacious, slightly inflated when dry, scarious, fibrous with time; blade elliptic, sub-acute, sub-coriaceous, margin entire. **Inflorescence** apical, flowering only once, racemose, arching-nutant, dense-flowered; peduncle laterally compressed, short, with a narrowly triangular, acute bract at the base; rachis laterally compressed, straight. **Floral bracts** less than one third the length of the ovary, narrowly triangular, acuminate, the apical ones gradually shorter. **Flowers** 30-33, simultaneous, resupinate, many-colored; sepals and petals purple or reddish brown with the margins creamy white, lip creamy white or pink, with a ring of short purple lines around the disc; column slightly tinted pink. **Ovary** terete, thin, smooth, not inflated. **Sepals** free, spreading, slightly concave at the apical half, lanceolate, acute, 6-veined, fleshy, margin entire; the lateral sepals slightly oblique, with a prominent dorsal keel. **Petals** spreading, free, slightly arching along the apical half, narrowly oblanceolate, acute, 3-veined, margin entire, slightly revolute along the basal half. **Lip** united to the column, deeply cordate at the base, 3-lobed, margin slightly erose; bicallose, the calli prominent, thin; disc provided with 3 thin keels, reaching the middle of the lip; lateral lobes transversely elliptic-suborbicular; mid-lobe bilobed, the lobes small, rounded, separated by a deep sinus with a wide mucro. **Column** straight, thin at the base, dilated towards the apical half. **Clinandrium-hood** short, margin entire. **Anther** ovoid, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles longer than the pollinia; viscidium semi-liquid. **Rostellum** apical, slit. **Nectary** slightly penetrating the ovary, just behind the perianth, not inflated, smooth.

OTHER SPECIMENS: MEXICO: Chiapas: Motozintla de Mendoza, Buenos Aires-Siltepec, 2090 m, 15 VII 1987, *Soto 3226,* AMO! (Illustration voucher.) **GUATEMALA: Chimaltenango:** San José Calderas, 2100 m, 11 III 1999, *Véliz 99.6980,* MEXU! **Guatemala:** Km 19 carr. El Salvador, ca. 1900 m, *Hágsater 9540,* AMO! (Illustration, AMO) San José Pinula, ca. 2000 m, 6 III 1979, *Hágsater 5770*, AMO! Ibid. pressed 18 V 1980, AMO! Ibid. pressed 7 IV 1983, AMO! Ibid. pressed 30 III 1984, AMO! Ibid. pressed 1 IV 1986, AMO! **[Sacatepéquez]:** Comprada en los alrededores de Antigua, 7 III 1982, *Hágsater 5771*, AMO! (Illustration, AMO) Ibid. pressed 1 III 1988, AMO!

OTHER RECORDS: [MEXICO]: Without locality, *Hágsater s.n.,* (slide), AMO! **GUATEMALA: Guatemala:** San José Pinula, *Hágsater s.n.*, (slide) AMO! **[Sacatepéquez]:** Comprada en Antigua a Alfonso, *Hágsater* 5767, (slide), AMO! **[Sololá]:** Atitlán, *Hágsater s.n.*, (slide), AMO! **EL SALVADOR:** Without locality, 15 XII 1977, *Hamer A89*, (slide), AMO!

DISTRIBUTION AND ECOLOGY: Found sympatric with *E. arbuscula* Lindl. in the mountains of the high and low mountainous regions from the Volcán Tacaná in Chiapas, Mexico, around Guatemala City, to northern El Salvador, epiphytic at around 1900-2000 m altitude. Terrestrial and epiphytic in humid forests. Flowering from February to July, and November-December.

RECOGNITION: *Epidendrum polychromum* belongs to the Arbuscula Group, Arbuscula Subgroup which is characterized by the successive lateral growths produced from the middle of the previous growth, few leaves aggregate towards the apex of the stems, arching, apical inflorescence with membranaceous, colorful flowers, the lip bicallose. The species is recognized by the dense inflorescence with up to 33 attractive, colorful flowers, the sepals and petals purple, reddish brown or reddish green and the lip 3-lobed, creamy white with a ring of purple lines around the disc, the column slightly tinged with purple. *Epidendrum arbuscula* Lindl. has greenish cream colored flowers which turn yellowish brown with time and the column has a pair of triangular purple spots, the anther is also tinted purple. *Epidendrum nicaraguense* Scheeren ex Hágsater is morphologically very similar, but the inflorescence has 8-15 pale pink flowers which turn orange yellow with time, and a white lip; the flowers are somewhat larger (sepals 16-17 mm long). *Epidendrum radioferens* (A.H.S.) Hágsater grows in Mexico (Oaxaca & Chiapas) and Guatemala (Sierra de Cuchumatanes, and south to the Tajomulco) and has intense magenta-red to burgundy-red flowers, the lip with 3 central keels and multiple radiating, cream-colored or yellowish, thickened keels; the apical half of the lip frequently revolute.

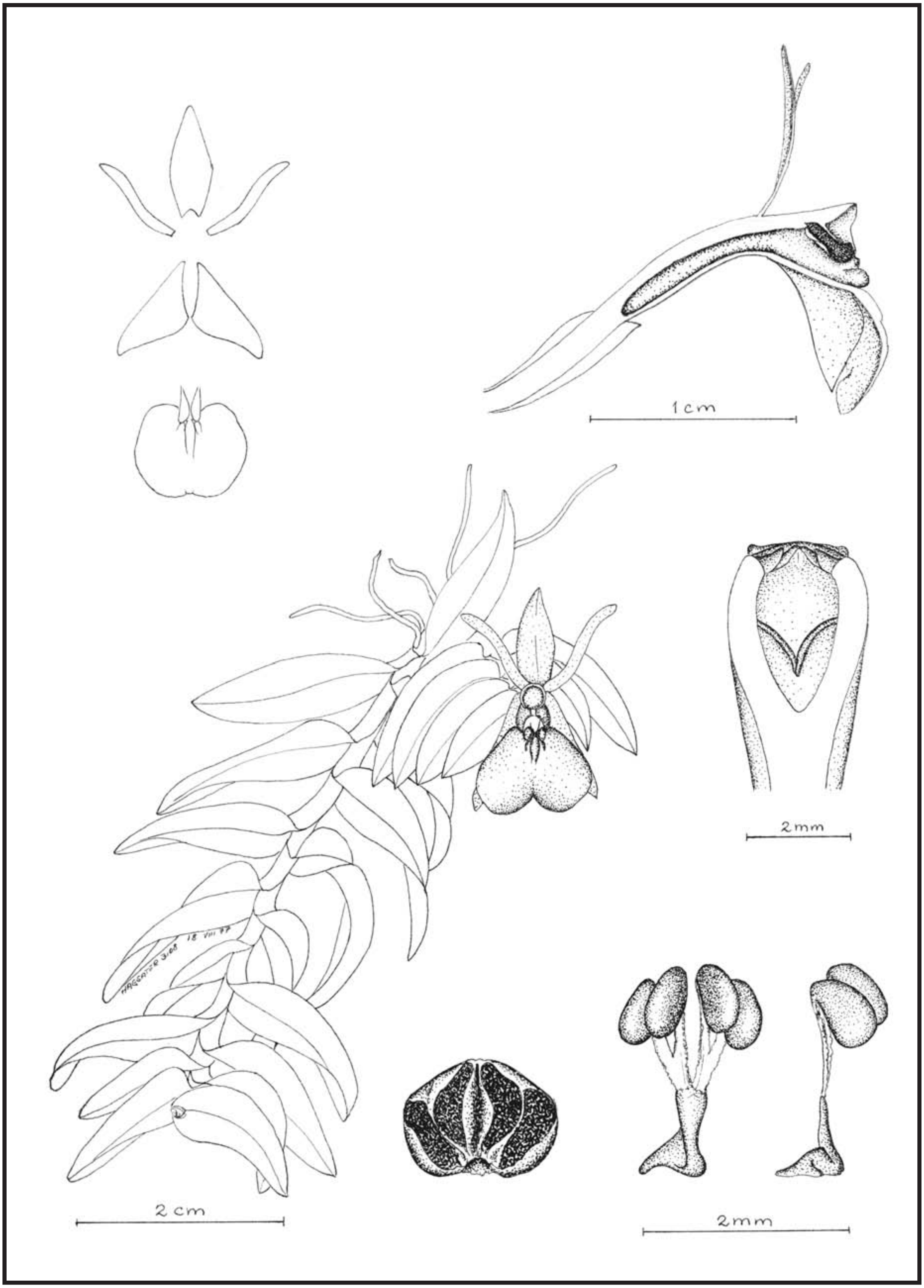


CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek, πολυ, many, and χρομα, color, in reference to the many-colored flowers which distinguish this species.

REFERENCE: Hamer F., 1981. **Las Orquídeas de El Salvador**, 3: 102.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM PORPAX Rchb.f. **Plate 1375**

EPIDENDRUM PORPAX Rchb.f., Bonpl. 3: 220. 1855.

Type: NICARAGUA: in monte Pantasmo in Segovia, ***Oersted s.n.*** Holotype: W-R 4173! Isotype: K-L. *Neolehmannia porpax* (Rchb.f.) Garay & Dunsterv., Venez. Orchid. Ill. 6: 37. 1976. *Nanodes porpax* (Rchb.f.) Brieger et Lueckel ex Lueckel, Die Orchidee 29: 179. 1978. [Non *E. porpax* Rchb.f., 1865.= *E. neoporpax* Ames.]

Synonyms: *Epidendrum porphyrophyllum* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 17: 37. 1922. Type: PANAMA: foothills east of Panama City, 10 m, 25 May 1921, ***C. W. Powell 183.*** Holotype: B (destroyed). Lectotype (designated by Christenson, 1991): AMES 23806! Isolectotype: MO 956016! Drawing: AMES 26797! Published drawing of flower in Mansfeld (1931: t. 55, nr. 217).

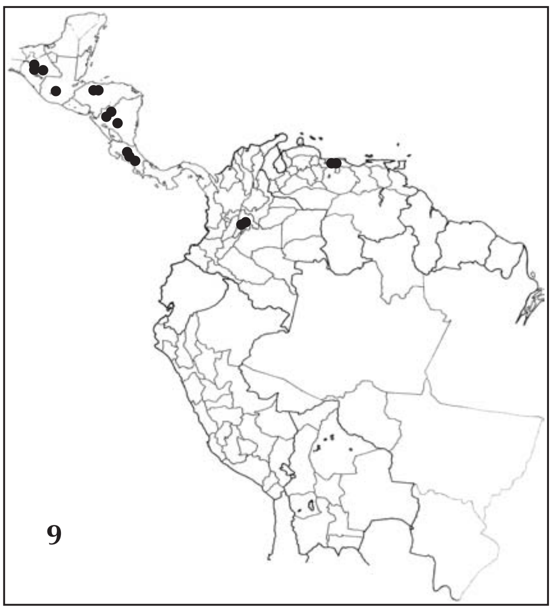
Hierba epífita, simpodial, cespitosa, compacta, 1.5-4.5 cm de largo. **Raíces** basales, carnosas, delgadas, blancas, 0.3-0.7 mm grosor; distribuidas a lo largo de un rizoma alargado, subterete, formado por 3-4 entrenudos, 10-12 mm de largo. **Tallos** sencillos, tipo caña, lateralmente aplanados, algo reclinados, 1.0-3.7 x 0.1-0.3 cm. **Hojas** 4-13, distribuidas a lo largo del tallo, dísticas, extendidas, ligeramente arqueadas, articuladas, suculentas; vaina tubular, algo ensanchada en el ápice, lateralmente comprimida, 3-5 mm de largo; lámina angostamente ovado lanceolada, en ocasiones conduplicadas, subaguda, margen diminutamente ciliado en el ápice, 7-20 x 3-7 mm. **Bráctea espatácea** 1, hemielíptica al extenderse, conduplicada en posición natural, ápice redondeado y ligeramente oblicuo, 7-8 mm de largo. **Inflorescencia** apical, uniflora, sésil. **Brácteas florales** más cortas que el ovario y ocultas en su totalidad por la bráctea espatácea. **Flor** 1, resupinada, carnosa, verde con el labelo púrpura rojizo, lustroso, frecuentemente con el margen verdoso; aroma débilmente herbáceo (a medio día). **Ovario** terete, delgado, levemente arqueado, muy ligeramente inflado en la mitad ventral apical, 11-16 mm de largo. **Sépalos** subagudos, diminutamente apiculados, 3-nervados, margen entero, extendido, 8.5-14 x 4-5 mm; el **dorsal** extendido, libre, elíptico lanceolado; los **laterales** descendentes, adnados de manera oblicua a la mitad basal de la columna, triangular ovados, oblicuos. **Pétalos** erecto extendidos, libres, lineares, oblicuos, redondeados, 1-nervados, margen extendido, crenado-denticulado hacia el ápice, 8.5-13 x 0.7-1.8 mm. **Labelo** unido a la columna, entero, base cordada, reniforme a suborbicular-subcuadrado, ligeramente convexo, redondeado y cortamente emarginado en el ápice, margen eroso dentado, ligeramente recurvado en la mitad basal, 6.7-10 x 8.5-14 mm; bicalloso, los callos prominentes, globosos; disco provisto de 3 quillas prominentes, subagudas, el par lateral más corto que la quilla central, la cual se desvanece en la parte media de la lámina. **Columna** recta, delgada en la base y amplia en el ápice, 5-6 mm de largo. **Clinandrio** prominente, cuculado, entero, con el margen crenado. **Antera** reniforme, la superficie fuertemente espiculada, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas de la misma longitud de los polinios, suaves y granulosas; viscidio semilíquido. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando 1/3 del largo de la cavidad estigmática. **Nectario** penetrando ½ del ovario, no inflado, no ornamentado. **Cápsula** elipsoide; cuerpo 14-18 x 8-9 mm; pedicelo, terete, delgado, 4-6 mm de largo; cuello apical con el perianto persistente, 4-6 mm de largo.

Epiphytic, sympodial, caespitose, compact **herb. Roots** basal, fleshy, thin, distributed along the elongate, sub-terete rhizome formed by 3-4 internodes. **Stems** simple, cane-like, laterally compressed, somewhat reclining. **Leaves** 4-13, distributed throughout the stem, distichous, spreading, slightly arching, articulate, succulent; sheath tubular, somewhat widened towards the apex, laterally compressed; blade narrowly ovate-lanceolate, sometimes conduplicate, subacute, margin minutely ciliate at the apex. **Spathaceous bract** 1, hemi-elliptic when spread, conduplicate in natural position, apex rounded and slightly oblique. **Inflorescence** apical, single-flowered, sessile. **Floral bracts** shorter than the ovary and hidden within the spathaceous bract. **Flower** single, resupinate, fleshy, green with the lip reddish purple, lustrous, the margin frequently greenish; weakly fragrant at mid-day, herbaceous. **Ovary** terete, thin, slightly arching, very slightly inflated along the apical, ventral half. **Sepals** sub-acute, minutely apiculate, 3-veined, margin entire, spreading; dorsal sepals spreading, free, elliptic-lanceolate; the lateral sepals descending, obliquely adnate to the basal half of the column, triangular ovate, oblique. **Petals** erect-spreading, free, linear, oblique, rounded, 1-veined, margin spreading, crenate-denticulate towards the apex. **Lip** united to the column, entire, base cordate, reniform to sub-orbicular-sub-quadrate, slightly convex, apex rounded and short-emarginate, margin erose-dentate, the basal half slightly recurved; bicallose, the calli prominent, globose; disc provided with 3 prominent, subacute keels, the lateral pair shorter than the central keel, which disappears ad the middle of the blade. **Column** straight, thin at the base, widened towards the apex. **Clinandrium-hood** prominent, cuculate, entire, the margin crenate. **Anther** reniform, the surface strongly spiculate, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose, as long as the pollinia; viscidium semi-liquid. **Nectary** penetrating ½ of the ovary, not inflated, smooth. **Capsule** ellipsoid, with a short, thin, pedicel, and a short apical neck, perianth persistent.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Ranging from Mexico (Chiapas) through central America to northern Venezuela and Colombia. Epiphytic in wet forests, cloud forests; found between 400 and 1800 m altitude. Flowering from June to March.

RECOGNITION: *Epidendrum porpax* belongs to the Porpax Group, which is characterized by the sympodial, somewhat repent habit, usually forming large mats, short, cane-like stems with very fleshy, succulent, articulate, distichous leaves, the apical margin minutely ciliate, single-flowered inflorescence, sessile flowers, and the lip generally reddish purple. The species is recognized by the small plants with somewhat reclining stems, the green flowers with a lustrous, convex, reddish purple lip proportionately wider than long, the apex rounded, the 8.5-14 mm long lateral sepals obliquely adnate to the column, and the linear petals, with the margin crenate-denticulate. It has been often confused with *Epidendrum peperomia* Rchb.f. which is vegetatively similar but the lip of that species is orbicular-cordiform, spreading, as wide as it is long, with the apex obtuse; and known from Venezuela and Colombia. *Epidendrum lambeauanum* De Wild. has larger, erect, plants, the stems with 4-6 lanceolate leaves 17-38 mm long, the flowers are cream-colored with the lip reddish purple, and the petals linear-oblanceolate. *Epidendrum mathewsii* Rchb.f. from Colombia, Ecuador and Peru has small, compact plants with erect stems, an orbicular-sub-quadrate lip with the apex obtuse, and linear, acute petals. The flowers of all these species are very similar, and thus best recognized by the vegetative habit.



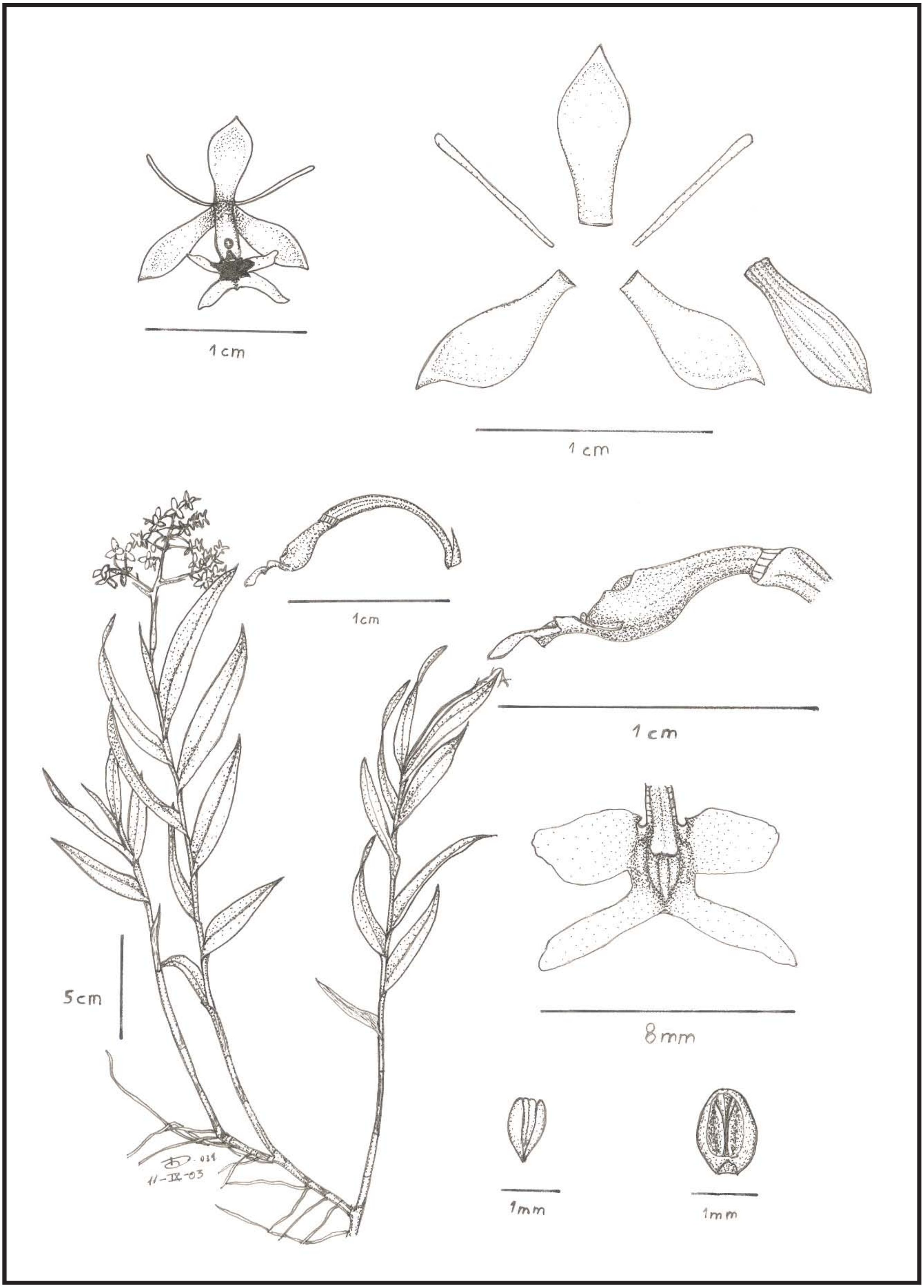
9

CONSERVATION STATUS: DD. Data deficient. Apparently widespread and common.

ETYMOLOGY: From the Latin, like a Roman shield-grip, fide Mayr (1998).

REFERENCES: Ames, O., 1923, *Central American Orchids*, **Schedul. Orchid.** 4: 48; Ames, O., F. T. Hubbard and C. Schweinfurth, 1936, ***The Genus Epidendrum in the United States and Middle America***: 152; Ames, O. and D. S. Correll, 1952, **Orchids of Guatemala.** *Fieldiana: Botany,* 26: 1: 360. Bechtel, H., P. Cribb and Launert, 1981, **The Manual of Cultivated Orchid Species.** MIT Press, 444 pages. Behar, M., and O. Tinschert, 2000, **Guatemala and its Orchids,** p. 116. Christenson, E. A., 1991, *Mesoamerican orchid studies II: Powell´s panamanian orchidaceae.* **Lindleyana** 6(3): 127. Dunsterville, G.C.K., and L.A. Garay, 1959, **Venezuelan Orchids Illustrated,** 1: 121-122; Hamer, F., 1983, *Neolemannia porpax* (Rchb.f.) Garay & Dunsterville in C.H. Dodson, **Icon. Pl. Trop.** 9: pl. 883. Hágsater, E., 2005, *Epidendrum* in F. Pupulin, **Vanishing Beauty: Native Costa Rican Orchids 1**: 271-273, San José C.R. Editorial de la Universidad de Costa Rica. Mayr, H., **Orchid Names and their Meanings**, Gantner Verlag, Vaduz. Russell, O. C., 1983, *Epidendrum porpax, Another Marvelous Miniature*, **Amer. Orch. Soc. Bull.** 52(1): 44-47; Soto, M., et al., 2007, **Orchids of Mexico**, Digital Catalogue: fig. 0392; Teuscher, H., 1978, *Epidendrum porpax.* **The Orchid Review** 86(1017): 85-86; Williams, L. O., P. H. Allen (with R. L. Dressler), 1980 ed. **Orchids of Panama.** Missouri Botanical Garden: 3(2): 366.

Authors: E. Santiago & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM PORPHYREODISCUM Hágsater, D.Trujillo & E.Santiago Plate 1376

EPIDENDRUM PORPHYREODISCUM Hágsater, D.Trujillo *et* E.Santiago*, sp. nov.*

Type: PERU: Huánuco: Distrito Chinchao, San Pedro de Carpish. Ruta Paty, 2358 m, 23 julio 2003, ***Delsy Trujillo 156***. Holotype: HURP! (Illustration voucher). Isotype: SEL!

Epidendro yungasensi Rolfe simile sed labello sub forma distincta, latiore inter lobuli medii lobulos divaricatos quam inter lobulos laterales, cum macula solida purpurea discum tengente separabile.

Hierba epífita, simpodial, algo rastrera, erecta a levemente arqueada, 35-45 cm de alto. **Raíces** basales, delgadas, blancas, 0.5-1 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente comprimidos, erectos a levemente arqueados (en ocasiones llegando a producir, de los entrenudos apicales de un tallo maduro dañado, nuevas plántulas que florecen), 23-25 x 0.2-0.53 cm; cubiertos en la base por vainas tubulares, no foliares, escariosas, 2-4 cm de largo. **Hojas** 6-10, distribuidas hacia la mitad apical de los tallos, articuladas, dísticas, desiguales en tamaño, (la basal más pequeña); vaina tubular, lateralmente comprimida, ligeramente estriada, 2.2-4 cm de largo; lámina oblongo lanceolada, cortamente acuminada, margen entero, 5.5-13 x 0.5-1.7 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, paniculada, pauciflora, laxa, 12-14 cm de largo; pedúnculo delgado, lateralmente aplanado, 5-6 cm de largo; brácteas del pedúnculo 2-3, tubulares en la mitad basal y conduplicadas en la mitad apical, acuminadas, algo ancipitosas, 3.5-4.5 cm de largo; raquis con 2 racimos extendidos, cortos, 4.5-6 cm de largo; cada uno con una bráctea basal semejante a las florales pero de mayor tamaño, 1-2.5 cm de largo. **Brácteas florales** más cortas que el ovario, linear lanceoladas, acuminadas, 1-3 mm de largo. **Flores** 40, simultáneas, resupinadas, de color verde con el labelo y la mitad apical de la columna blancos, el disco con una mancha sólida morada; sin datos de fragancia. **Ovario** terete, delgado, no inflado, no ornamentado, 8 mm de largo. **Sépalos** extendidos, libres, glabros, carnosos, oblanceolado-espatulados, agudos, 5-nervados, margen entero, extendido, 6.5-7.5 x 2-3 mm. **Pétalos** extendidos, libres, filiformes, ápice redondeado, 1-nervados, margen entero, 6-6.5 x 0.3-0.4 mm. **Labelo** unido a la columna, trilobado, truncado en la base, 3.3-5 x 7-8 mm; unicalloso, el callo laminar, incipientemente bilobulado en el ápice; disco tricarinado, las carinas delgadas, central alargada hasta el seno apical; lóbulos laterales rectangulares, extendidos, margen ondulado, algo plegado lateralmente en la base, 2.5-3 x 1.5-2 mm; lóbulo medio bilobado, los lóbulos divaricados (más anchos que los lóbulos laterales), cada lóbulo linear, subobtuso, margen entero, 2-3.5 x 1 mm. **Columna** recta, muy delgada en la mitad basal y abruptamente dilatada hacia la mitad apical, bidentada en el ápice, 5 mm de largo. **Clinandrio** reducido, margen entero. **Antera** ovoide, 4-locular. **Polinios** 4, tipo ala de pájaro, semejantes de tamaño. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** pequeños, de menos de la mitad del largo de la cavidad estigmática. **Nectario** poco profundo, apenas penetrando el perianto. **Cápsula** no vista.

Epiphytic, sympodial, somewhat creeping, arching **herb. Roots** from the base of the main stem, thin, white. **Stems** simple, cane-like, laterally compressed, erect to slightly arching (occasionally producing flowering plantlets from the upper internodes of a mature damaged stem); the base covered by non-foliar, scarious, tubular sheaths. **Leaves** 6-10, distributed throughout the apical half of the stem, articulate, distichous, unequal in size (the basal one smaller); sheath tubular, laterally compressed, slightly striated; blade oblong-lanceolate, short-acuminate, margin entire. **Inflorescence** apical, flowering only once, paniculate, lax, few-flowered; peduncle thin, laterally compressed; bracts of the peduncle 2-3, tubular towards the base, conduplicate above, acuminate, somewhat ancipitose; rachis with 2 short, spreading racemes, each subtended by a bract similar to the floral bracts but larger. **Floral bracts** much shorter than the ovary, linear-lanceolate, acuminate. **Flowers** 40, simultaneous, resupinate, green, the lip and the apical half of the column white, the disc marked with a solid purple spot. **Ovary** terete, thin, not inflated, smooth. **Sepals** spreading, free, glabrous, fleshy, oblanceolate-spatulate, acute, 5-veined, margin entire, spreading. **Petals** spreading, free, filiform, 1-veined, apex rounded, margin entire. **Lip** united to the column, 3-lobed, base truncate; callus single, a thick fleshy structure, slightly bilobed a the apex; disc 3-carinate, the keels thin, the central keel elongate to the apical sinus; lateral lobes rectangular, spreading, margin undulate, somewhat laterally plicate at the base; mid-lobe bilobed, the lobes divaricate (lip wider between the apical lobes than between the lateral lobes), each lobe linear, sub-obtuse, margin entire. **Column** straight, the basal half very thin, abruptly dilated towards the apical half, apex bidentate. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, 4-celled. **Pollinia** 4, "bird-wing" type, similar in size. **Rostellum** sub-apical, slit. **Nectary** short, barely penetrating to the perianth.

OTHER SPECIMENS: PERU: Cusco: Paucartambo, entre Puente Unión sobre el Río Taquila, 1700-1800 m, 22 IX 1991, *León 3207*, USM x2! (illustration, AMO) **Huánuco:** San Pedro de Carpish, 2300 m, 17 VIII 2002, *Salinas 489*, USM!



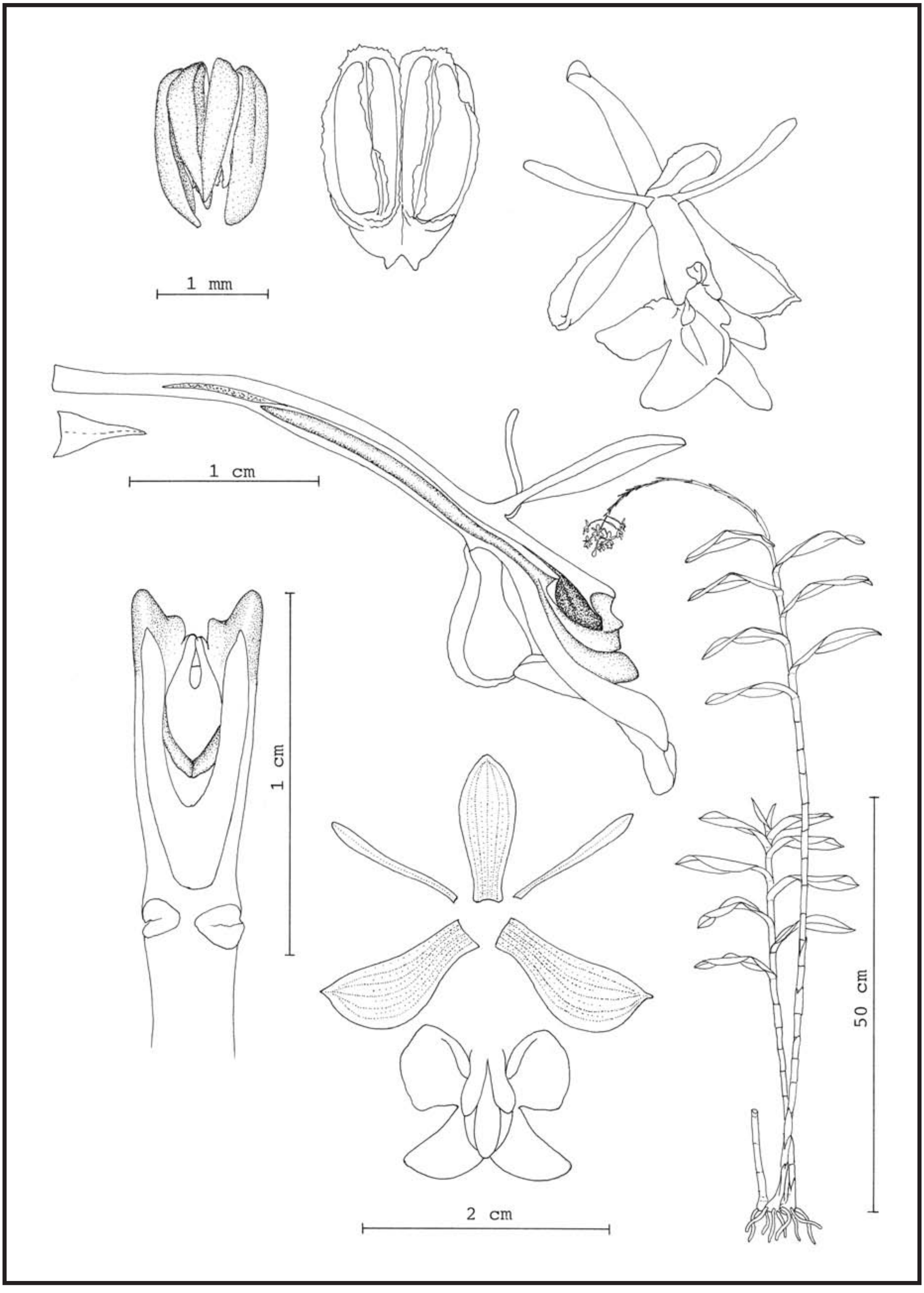
DISTRIBUTION AND ECOLOGY: Known from Peru, provinces of Huánuco and Cusco, along the upper eastern slope of the Andes, epiphytic at 1700-2358 m altitude. Flowering in August and September.

RECOGNITION: *Epidendrum porphyreodiscum* belongs to the Pseudepidendrum Group is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, apical inflorescence, lacking a spathaceous bract, the petals filiform and the lip usually 3-lobed, with 3 parallel fleshy keels, the apical lobe often bifurcate, and the pollinia "bird-wing" type and Paniculatum Subgroup which has bicolor flowers (generally green with the lip and apex of the column white) the disc sometimes marked with purple to red. The species is recognized by the erect, somewhat arching stems, the small flowers (sepals 6.5-7.5 mm long) green with the lip white and a solid purple spot covering the disc, column thin at the base, 5 mm long. *Epidendrum yungasense* Rolfe has similar plants, but the flowers are green with a white lip and purple dots around the disc. *Epidendrum parviflorum* Ruiz & Pavón has erect plants, sepals 5 mm long, a very short, thick column 3 mm long, and the lip has a single wide callus. *Epidendrum poeppigii* Hágsater has linear-lanceolate, long, acuminate leaves, successive flowers and a short thick column 3 mm long.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek ποσφυρεος, purple, and δισκος, the disc, or central area of the lip, where the keels are found, in reference to the solid purple spot-covered disc of the lip which distinguishes this species from similar ones in the area.

Authors: E. Hágsater, D. Trujillo & E. Santiago **Illustrator: D. Trujillo** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM PORPHYREUM Lindl. **Plate 1377**

EPIDENDRUM PORPHYREUM Lindl., Hooker's J. Bot. 3: 86, 1841. Illustration ibid. 3: 307, tab. VII. VIII. 1841.

Type: ECUADOR: Pichincha: in woods on the western side of [Mount] Pichincha, ***Jameson s.n.*** Holotype: K-L! Tracing W-R 49522!

Hierba epífita o terrestre, simpodial, cespitosa, 50-130 cm de alto. **Raíces** basales, carnosas, 3-4 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base y lateralmente aplanados hacia el ápice, erectos, rectos, 40-100 x 0.3-1.2 cm; cubiertos en la mitad basal por vainas tubulares no foliares, escariosas y fibrosas con el tiempo, 2-4.5 cm de largo. **Hojas** 7-20, distribuidas en la mitad apical del tallo, alternas, articuladas, erecto extendidas; vainas tubulares, finamente estriadas, 1.5-4.5 x 0.3-1.2 cm; lámina angostamente elíptica, aguda a cortamente acuminada, subcoriácea, margen entero, 8-17.5 x 1.5-4 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, paniculada, erecta a ligeramente arqueada, pluriflora, densa, 9-35 cm de largo; pedúnculo delgado, lateralmente aplanado, recto, 7-16 cm de largo; cubierto en su totalidad por 2 a 7 brácteas tubulares, escariosas, acuminadas, parcialmente imbricadas, 1.5-13 cm de largo; raquis terete, con 6 a 8 racimos cortos y extendidos, multifloros, densos; cada uno de ellos con una bráctea basal angostamente triangular, acuminada, escariosa, 1.5-6 cm de largo. **Brácteas florales** más cortas que el ovario, angostamente triangulares, largamente acuminadas, abrazadoras, 5-17 mm de largo. **Ovario** terete, delgado, no inflado, no ornamentado, 20-45 mm de largo. **Flores** 40-150, simultáneas, resupinadas, de color púrpura con el disco blanco; sin fragancia. **Sépalos** extendidos, libres, carnosos, dorsalmente papilosos, obovado oblanceolados, obtusos, ligeramente cóncavos, 7-nervados, margen entero, 13-15 x 5-6.5 mm; los **laterales** oblicuos. **Pétalos** extendidos, libres, linear oblanceolados, redondeados, 1-nervados, margen entero, extendido, 13 x 1.5 mm. **Labelo** unido a la columna, 3-lobado, cordado en la base, margen entero, 13.5-15 x 15-16 mm; bicalloso, los callos prominentes, laminares; disco provisto de 3 quillas paralelas, carnosas, la central ligeramente más larga, todas desvaneciéndose antes de llegar al seno apical; lóbulos laterales ovado-dolabriformes, 6-8 x 8.5-10 mm; lóbulo medio subdeltado, ampliamente emarginado formando un par de lóbulos triangulares, ligeramente divaricados, obtusos, 5.5-6 x 15-16 mm. **Columna** delgada, recta, el ápice con un par de alas laterales cortas, 10 mm de largo. **Clinandrio** reducido, margen entero. **Antera** obovoide, 4-locular, truncada en el ápice. **Polinios** 4, tipo "ala de pájaro", fuertemente comprimidos lateralmente, similares en tamaño. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** pequeños, de ¼ del largo de la cavidad estigmática. **Nectario** penetrando a la mitad del ovario, no inflado, liso. **Cápsula** no vista.

Epiphytic or terrestrial, sympodial, caespitose, tall **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, terete at the base, laterally compressed towards the apex, erect, straight; the basal half covered by non-foliar, scarious, tubular sheaths, becoming fibrous with time. **Leaves** 7-20, distributed along the apical half of the stem, alternate, articulate, erect, spreading; sheaths tubular, minutely striated; blade narrowly elliptic, acute to short acuminate, sub-coriaceous, margin entire. **Spathaceous bract** lacking. **Inflorescence** apical, paniculate, erect to slight arching, densely many-flowered; peduncle thin, laterally compressed, straight; totally covered by 2-7 tubular, scarious, acuminate, partly imbricating sheaths, variable in length; rachis terete, with 6-8 short, spreading, many-flowered, dense racemes, each with a narrowly triangular, acuminate, long bract at the base. **Floral bracts** shorter than the ovary, narrowly triangular, long-acuminate, amplexicaul. **Ovary** terete, thin, not inflated, smooth, long. **Flowers** 40-150, simultaneous, resupinate, purple with the disc white; without fragrance. **Sepals** spreading, free, fleshy, dorsally papillose, obovate-oblanceolate, obtuse, slightly concave, 7-veined, margin entire, the lateral sepals oblique. **Petals** spreading, free, linear-oblanceolate, rounded, 1-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base cordate, margin entire; bicallose, the calli prominent, laminar, disc provided with 3 parallel, fleshy keels, the mid-keel longer, all disappearing before reaching the apical sinus; lateral lobes ovate-dolabriform; mid-lobe sub-deltate, widely emarginate, forming a pair of triangular, somewhat divaricate, obtuse lobes. **Column** thin, straight, apex with a pair of short, lateral wings. **Clinandrium-hood** reduced, margin entire. **Anther** obovoid, 4-celled, apex truncate. **Pollinia** 4, "bird-wing-type", strongly laterally compressed, similar in size. **Rostellum** sub-apical, slit. **Nectary** penetrating the middle of the ovary, not inflated, smooth.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Known only from the western slopes of the Andes from southern Colombia to central Ecuador, terrestrial or epiphytic, at 1500-3300 m altitude. Flowering throughout the year.

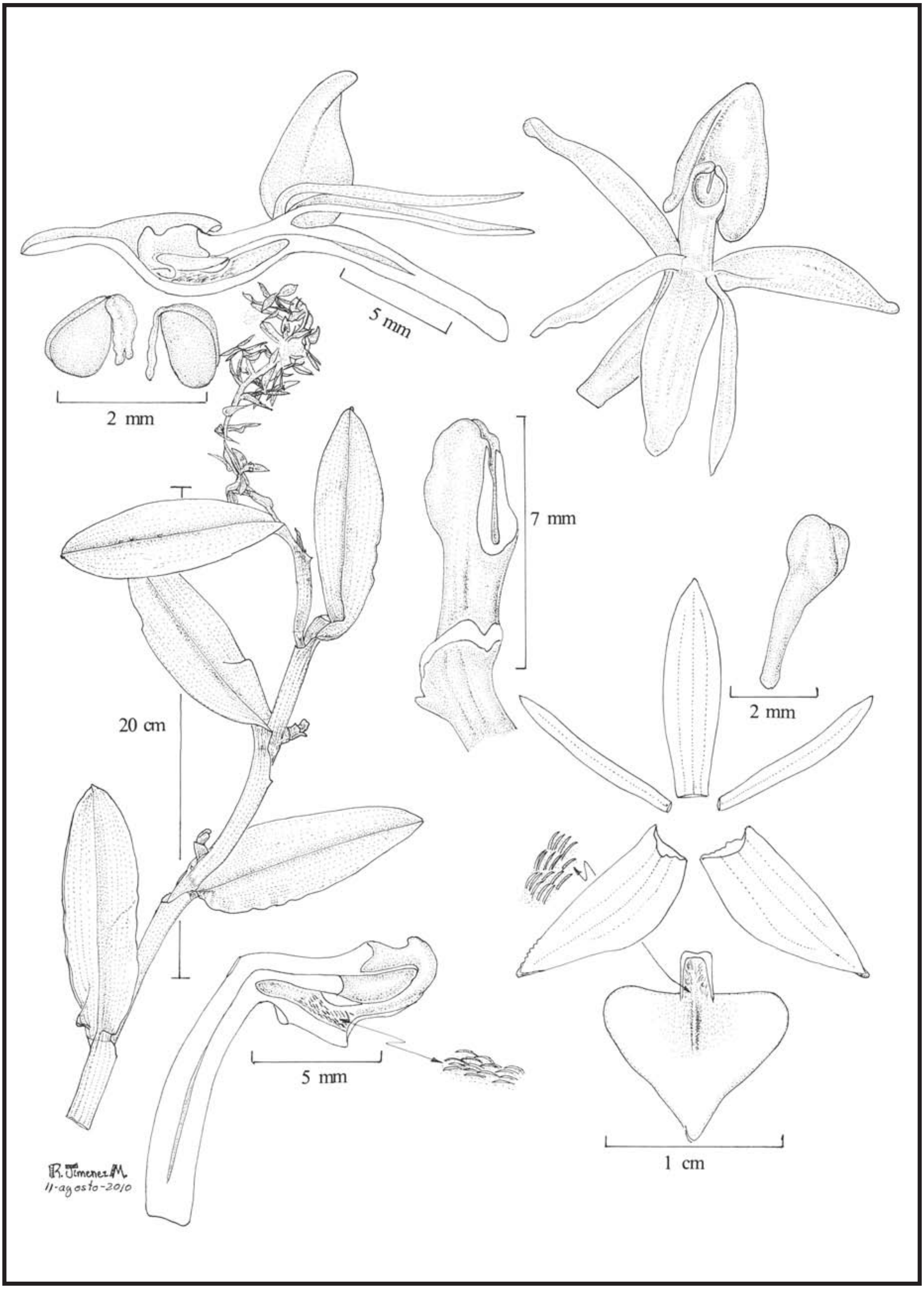
RECOGNITION: *Epidendrum porphyreum* belongs to the Pseudepidendrum Group is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, apical inflorescence, lacking a spathaceous bract, the petals filiform and the lip usually 3-lobed, with 3 parallel fleshy keels, the apical lobe often bifurcate, and the pollinia "bird-wing" type and Porphyreum Subgroup which has flowers colored reddish orange, deep purple or lilac-pink, the calli generally prominent, sometimes horn-like. The species is recognized by the robust plants, narrowly elliptic leaves 8-17.5 x 1.5-4 cm, purple-colored flowers the disc white; partly spreading sepals 13-15 x 5-6.5 mm; the lateral lobes of the lip ovate-dolabriform, and the mid-lobe sub-deltate, widely emarginate, forming a pair of triangular, obtuse lobes; column 10 mm long. *Epidendrum laeve* Lind. has similarly colored flowers but smaller, the sepals 10-11 mm long, the lateral lobes of the lip are slightly falcate, and the mid-lobe deeply emarginate. *Epidendrum spathatum* Schltr. has red-orange flowers, the disc of the lip yellowish, sepals 10-12 x 2-4 mm; the mid-lobe of the lip sub-entire, with the lateral lobes slightly bilobed, and the mid-lobe very short; the calli are horn-like and apically involute. *Epidendrum atacazoicum* Schltr. has a characteristic pyramidal, compact inflorescence, flowers pink-lilac, the lip lighter, smaller flowers (sepals 8.5-8.7 [10-11] mm long, the width of the lip is the same between the lateral lobes as the between the bifurcate mid-lobe, the lateral lobes are obliquely ovate, the mid-lobe deeply emarginate, forming a pair of linear-oblong, apically rounded lobes.



CONSERVATION STATUS: NT. Not Threatened. The species is common and widespread.

ETYMOLOGY: from the Greek πορφυρεος, purple, in reference to the color of the flowers.

Authors: E. Santiago & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM PROBOSANTHERUM Hágsater Plate 1378

EPIDENDRUM PROBOSANTHERUM Hágsater, *sp. nov.*

Type: PERU: Pasco: Oxapampa: Huancabamba, Naciente de la Quebrada Amistad, Sector Santa Bárbara, Parque Nacional Yanachaga-Chemillén, 10°20'20"S 75°38'36"W, 3350-3450 m, 14 agosto 2005, ***Edgardo M. Ortiz, Samuel Vilca C., Carlos Arias C., Sergio Shuña S. y Hector Cristóbal E. 786.*** Holotype: AMO 25721! (Illustration voucher) Isotypes: MO! The following specimens are cited as duplicates in *Tropicos*, but correspond to another, as of yet unidentifed species of the same group: AMAZ, HOXA! HUSA! HUT! USM (not found).

Epindendro macrostachyo Lindl. simile sed anthera cum appendice elongata sub forma elephantis proboscidis, labello late triangulari aequilatero ad basem truncato recedit.

Hierba terrestre, monopodial, ramificada arriba, hasta de 1.5 m de alto. **Raíces** en la base del tallo principal no vistas, escasas en algunas ramificaciones, carnosas, gruesas, blancas. **Tallos** escasamente ramificados subapicalmente, tipo caña, teretes, rectos, erectos; el principal hasta 1.38 m largo; las ramificaciones más cortas, ca. 30 cm de largo. **Hojas** numerosas en el tallo principal, menos en las ramas; distribuidas en los 2/3 apicales del tallo, articuladas, alternas; vaina tubular, finamente estriada, rugosa, algunas ligeramente infladas en el ápice, 40-80 x 6-12 mm; lámina lanceolada, obtusa, coriácea, margen apical denticulado, 9-11.8 x 2.9-3.3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, erecta, florece una sola vez, cilíndrica, 10-11 cm de largo; pedúnculo terete, delgado, recto, corto; raquis recto. **Brácteas florales** más largas que el ovario, lanceoladas, acuminadas, abrazadoras, las apicales gradualmente más pequeñas, 12-16 mm de largo. **Flores** ca. 15, simultáneas, no resupinadas, carnosas, rígidas, flores verdes con máculas moradas; fragancia no registrada. **Ovario** corto, delgado, con las costillas prominentes, no inflado, liso, 10-12 mm de largo. **Sépalos** libres, extendidos, agudos, 3-nervados, margen entero, extendido; el dorsal elíptico oblongo, 10.1-12 x 3 mm, los laterales oblongo ovados, ligeramente oblicuos, 10.2-11.3 x 4.0-4.25 mm. **Pétalos** libres, extendidos, lineares, agudos, casi rectos, 1-nervados, margen entero, extendido, 10.5 x 1.1 mm. **Labelo** unido a la columna, entero, anchamente triangular, equilátero, truncado en la base, subagudo en el ápice, esquinas redondeadas, cóncavo en posición natural, ligeramente abrazando el ápice de la columna sin cubrirla, margen entero, 10-11 x 8.5-9.0 mm; ecalloso, con una quilla angosta en el disco, terminando a la mitad de la lámina, glabro. **Columna** corta, gruesa, ligeramente arqueada hacia arriba en el ápice, 7 mm de largo, terminada en un par de ganchos laterales erectos. **Clinandrio** reducido, margen entero. **Antera** alargada, el cuerpo obovoide, terminada en un proceso dos veces más largo que el cuerpo, cilíndrico, que recuerda una trompa de elefante, 4-locular. **Polinios** 4, obovoides, lateralmente aplanados, subiguales; caudículas suaves y granulosas casi tan largas como los polinios, viscidium semilíquido. **Rostelo** a la mitad del cuerpo de la columna, hendido. **Lóbulos laterales del estigma** prominentes, ocupando 1/3 de la cavidad estigmática. **Nectario** poco profundo, sin penetrar el ovario, pubescente frente a la cavidad estigmática, la pubescencia dirigida hacia el fondo. **Cápsula** no vista.

Terrestrial, monopodial **herb** to 1.5 m tall, branching above. **Roots** basal from the main stem, scarce from the branches, fleshy, thick, white. **Stems** scarcely branching sub-apically, cane-like, terete, thick, straight, erect, the main stem tall, the branches shorter. **Leaves** numerous on the main stem, fewer on the branches, distributed throughout the apical 2/3, articulate, alternate; sheath tubular, minutely striated, rugose, somewhat inflated towards the apex; blade lanceolate, obtuse, coriaceous, apical margin denticulate. **Inflorescence** apical, racemose, erect, flowering only once, cylindrical; peduncle terete, thin, straight, short; rachis straight. **Floral bracts** longer than the ovary, lanceolate, acuminate, the apical ones gradually shorter. **Flowers** ca. 15, simultaneous, non-resupinate, fleshy, rigid, green with purple spots. **Ovary** short, thin, smooth, the ribs prominent. **Sepals** free, spreading, acute, 3-veined, margin entire, spreading; dorsal sepal elliptic-oblong, the laterals ovate-oblong, slightly oblique. **Petals** free, spreading, linear, acute, nearly straight, 1-veined, margin entire, spreading. **Lip** united to the column, entire, widely triangular, sides about equal in length, corners rounded, apex acute, concave in natural position, somewhat embracing the apex of the column without covering it, margin entire; ecallose, with a narrow keel down the middle which ends at the middle of the blade, glabrous. **Column** short, thick, the apex lightly arched upwards, ending in a pair of lateral erect hooks. **Clinandrium-hood** reduced, entire. **Anther** elongate, the body obovoid, prolonged into a process twice as long as the body, cylindrical, reminiscent of and elephant's trunk, 4-celled. **Pollinia** 4, obovoid, sub-equal, laterally compressed; caudicles soft and granulose, as long as the pollinia, viscidium semi-liquid. **Rostellum** at the middle of the body of column, slit. **Nectary** without penetrating the ovary, pubescent in front of the stigmatic cavity, the pubescence directed inwards.

OTHER SPECIMENS: None seen.

OTHER RECORDS: PERU: Pasco: Oxapampa; Huancabamba, Parque Nacional Yanachaga-Chemillen, 3260 m, *Monteagudo 13750*; photographs 44 (1), (2), (3), (4), (5) sepals and petals green tinged with purple, lip cream-colored, HOXA, duplicates at AMO! These images show an elongate anther, unlike the normal, obtuse or truncate anther. The full series of # 44 images are a mixed collection, the other plant having entirely green flowers, sepals and petals somewhat darker.

DISTRIBUTION AND ECOLOGY: Presently known only from the type, from the Parque Nacional Yanachaga-Chemillén, in the province of Oxapampa, Pasco, Peru, at around 3400 m altitude. Flowering in August. There are several species of the Macrostachyum group in the Cordillera de Yanachaga, they differ in the size and shape of the leaves, size of the flowers, shape of the petals and lip as well as the anther caps. The group requires detailed study.

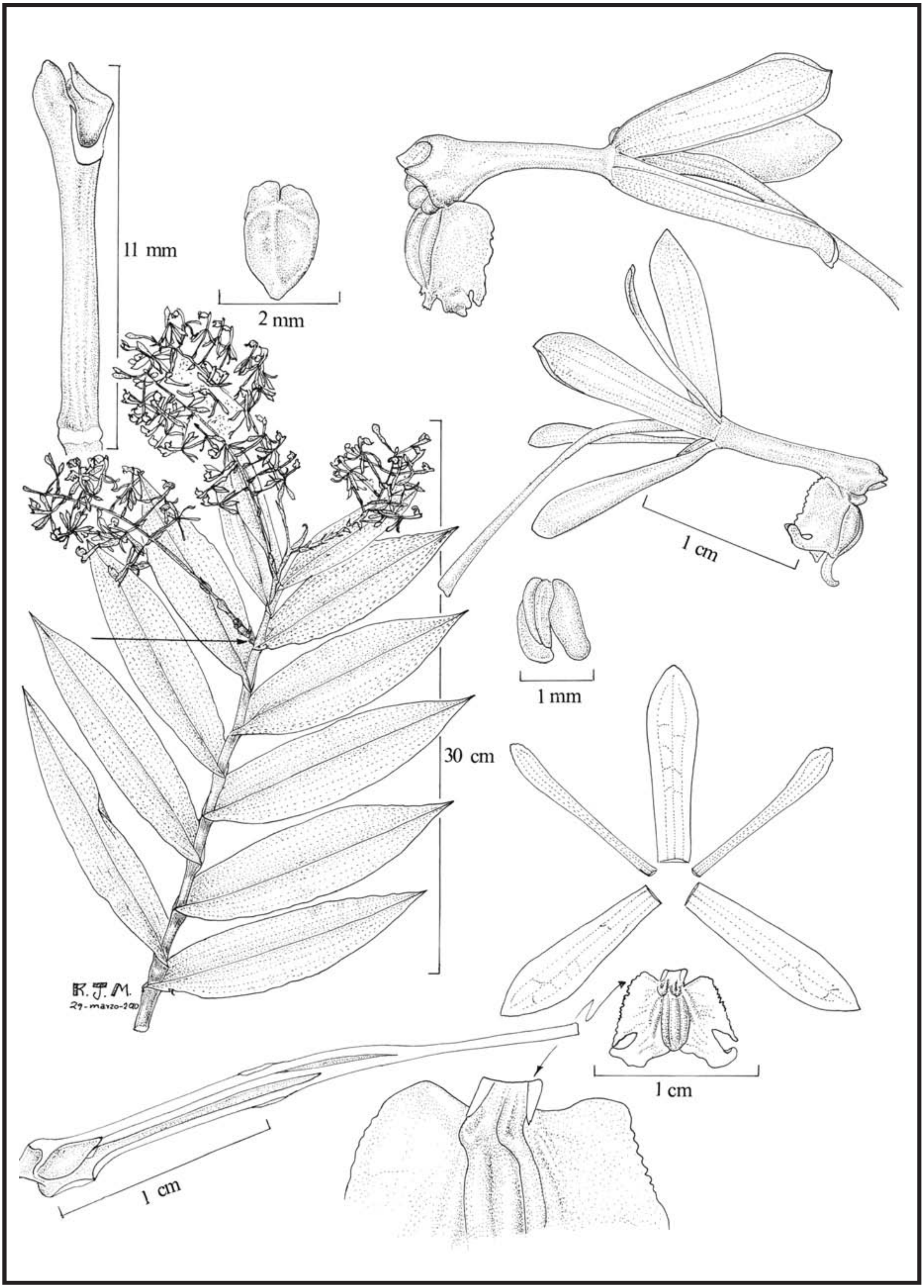


RECOGNITION: *Epidendrum probosantherum* belongs to the Macrostachyum Group, which is characterized by the monopodial plants with sub-apical branching, rugose leaf sheaths, racemose inflorescence, and fleshy flowers with a simple, conduplicate lip embracing the column, and the Macrostachuym Sub-group which has a cylindrical inflorescence with non-resupinate flowers, the lip entire, triangular to cordiform, and the nectary pubescent in front of the stigmatic cavity. The species is recognized by the large, scarcely branching plants, the lanceolate leaves, 9-11.8 cm long, the floral bracts longer than the ovaries, 12-16 mm long and flowers (sepals 10-12 mm long), linear petals, and the lip widely triangular, the base truncate, and especially by the very prominent, elongate anther which ends in an process about twice as long as the body of the anther, cylindrical and reminiscent of the elephant's trunk. *Epidendrum oxycalyx* Hágsater & Dodson is somewhat similar but has linear-lanceolate acuminate petals, a narrower cordiform lip, without either calli nor any keel, and is widespread from southern Colombia to northern Peru and has be reported from the same area. In *Epidendrum orthophyllum* Hágsater & Dodson the lip is similarly widely triangular, nearly truncate at the base, the corners rounded, but lacks the narrow keel, and the sepals are wide, rhombic, and the anther is short, acute. *Epidendrum macrostachyum* Lindl. which also has linear petals, has a cordiform lip, and successive flowers, though several are open at any one time; the anther is short and acute. *Epidendrum palaciosii* Hágsater & Dodson has smaller flowers, sepals 7-8 mm long, dorsally muriculate, petals oblanceolate, and the lip cordiform, anther ovoid, truncate.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek προβοσκις, the elongated trunk of an elephant, and ανθηρα the anther, in reference to the peculiar, very long anther which is reminiscent of and elephant's trunk (Proboscidea: Elephantidae).

Author: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM PSEUDOPANICULATUM Dodson **Plate 1379**

EPIDENDRUM PSEUDOPANICULATUM Dodson, Selbyana 2: 289. 1978.

Type: ECUADOR: Los Ríos: km 56, Quevedo-Santo Domingo, Río Palenque Biological Station, 150-220 m, cult. 15 July 1974, ***Calaway H. Dodson 5970.*** Holotype: SEL! Isotype: AAU! Clonotypes: pressed cult. 15 June 1976, MO! 20 November 1978, SEL 28135!

Hierba epífita, simpodial, cespitosa, 100-120 cm de alto. **Raíces** basales, carnosas, delgadas. **Tallos** sencillos, tipo caña, lateralmente aplanados, erectos o ligeramente arqueados, 90-100 x 0.2-0.6 cm; cubiertos hacia la base por vainas tubulares no foliares, escariosas, 3-4.5 x 0.2-0.6 cm. **Hojas** 12 o más, alternas, articuladas, erecto extendidas; vainas tubulares, finamente estriadas, 2.5-3 x 0.2-0.7 cm; lámina angostamente elíptica a elíptica, aguda, margen entero, 7-16 x 1.5-3.9 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical y lateral, racemosa, produciendo racimos adicionales a partir del mismo pedúnculo y entonces pluriracemosa, arqueado, pauciflora, laxa, la apical de 10-50 cm de largo; las laterales 10-20 cm de largo; pedúnculo subterete, delgado, 4.5-46 cm de largo, cubierto en su totalidad por brácteas lanceoladas, acuminadas, abrazadoras, parciamente imbricadas, 5-8 mm de largo; raquis muy corto con respecto a la longitud del pedúnculo, 4-9 cm de largo. **Brácteas florales** más cortas que el ovario, muy semejantes a las brácteas del pedúnculo, lanceoladas, acuminadas, abrazadoras, extendidas con respecto al raquis, 4-6 mm de largo. **Ovario** terete, delgado, no inflado, no ornamentado, 20-23 mm de largo. **Flores** 8-90, resupinadas, generalmente agrupadas en un racimo compacto en el ápice del pedúnculo, verdes con el ápice de la columna y la base del labelo blanco, disco con 5 líneas purpúreas sobre las quillas; sin datos de fragancia. **Sépalos** reflexos, libres, angostamente espatulados, subobtusos a redondeados, 3-nervados, margen entero, 12-12.5 x 2-3 mm. **Pétalos** reflexos, libres, linear filiformes, subobtusos, 1-nervados, margen entero, extendido, 11-11.5 x 1-1.5 mm. **Labelo** unido a la columna, incipientemente trilobado, convexo en posición natural, ligeramente cordado en la base, 5.7-6 x 7.7-8 mm; bicalloso, los callos laminares, bajos y pequeños; disco provisto de 3 quillas paralelas, delgadas, todas llegando hasta el seno apical de la lamina; lóbulos laterales oblicuamente rectangulares, margen dentado, esquina apical aguda, 3 x 4.5 mm; lóbulo medio corto, bilobado, formando un par de lóbulos divaricados, 2.2 x 7.7 mm; cada lóbulo linear subtriangular, margen entero, 2.2 x 3.7 mm. **Columna** delgada, recta, con un par de dientes diminutos en el ápice, 10-11 mm de largo. **Clinandrio** reducido, margen entero. **Antera** obovoide, 4-locular. **Polinios** 4, tipo "ala de pájaro"; el par interior más pequeño; caudículas no vistas. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** y **nectario** no vistos. **Cápsula** angostamente elipsoide.

Epiphytic, sympodial, caespitose, tall **herb. Roots** basal, fleshy, thin. **Stems** simple, cane-like, laterally compressed, erect to slightly arching; the base covered by non-foliar, scarious, tubular sheaths. **Leaves** 12 or more, alternate, articulate, erect-spreading; sheaths tubular, minutely striated; blade narrowly elliptic to elliptic, acute, margin entire. **Inflorescence** apical and lateral, racemose, producing addition racemes from the same peduncle and the pluri-racemose, arching, lax, few-flowered, long; peduncle sub-terete, thin, totally covered by lanceolate, acuminate, amplexicaul, partly imbricating bracts; rachis very short compared to the peduncle. **Floral bracts** much shorter than the ovary, very similar to the bracts of the peduncle, lanceolate, acuminate, amplexicaul, spreading relative to the rachis. **Ovary** terete, thin, not inflated, unornamented. **Flowers** 8-90, resupinate, generally bunched in a compact raceme at the apex of the peduncle, green with the apex of the column and base of the lip white, disc with 5 purple lines on the keels. **Sepals** reflexed, free, narrowly spatulate, sub-obtuse to rounded, 3-veined, margin entire. **Petals** reflexed, free, linear-filiform, sub-obtuse, 1-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, convex in natural position, base slightly cordate; bicallose, the calli laminar, low and small; disc provided with 3 parallel, narrow keels that reach the apical sinus; lateral lobes obliquely rectangular, apical margin dentate, apical corner acute; mid-lobe short, bilobed, forming a pair of divaricate lobes, each lobe linear-sub-triangular, margin entire. **Column** thin, straight, with a pair of minute teeth at the apex. **Clinandrium-hood** reduced, margin entire. **Anther** obovoid, 4-celled. **Pollinia** 4, "bird-wing" type, the inner pair smaller. **Rostellum** sub-apical, slit. **Capsule** narrowly ellipsoid.

OTHER SPECIMENS: ECUADOR: Esmeraldas: 4 km from highway at km 16, Esmeraldas to Santo Domingo, 300 m, 13 IX 1980, *Dodson 10445*, SEL! **Pichincha**: km 56, Quevedo to Santo Domingo, 220 m, 24 VIII 1987, *Dodson 17308*, MO! (Illustration voucher).

OTHER RECORDS: COLOMBIA: Chocó: Bahía Solano, Río Mecana or Río Nimiquia, 100 m, *Misas 48*, xerox of illustration, AMO! photo and illustration published as *Epidendrum paniculatum* Ruíz & Pavón, by Misas (2005).

DISTRIBUTION AND ECOLOGY: Ranging along the Chocó, the lower Pacific slope of the Andes in Colombia and northern Ecuador, epiphytic, at 100-300 m altitude. Flowering from June to November.

RECOGNITION: *Epidendrum pseudopaniculatum* belongs to the Pseudepidendrum Group which is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, usually apical inflorescence, the filiform petals and the lip usually 3-lobed with the apical lobe often bifurcate; Turialvae Subgroup which has a racemose and few-flowered inflorescence on an elongate peduncle, usually producing new racemes over the years and thus pluriracemose and the pollinia "bird-wing" type. The species is recognized by the plants with apical and lateral inflorescences with a raceme of flowers at the end of a long peduncle covered by multiple small bracts, green flowers, the lip white, the disc with 5 parallel purple lines on the keels, reflexed sepals 12-12.5 mm long. *Epidendrum paniculatum* Ruiz & Pavón has an apical, paniculate inflorescence with a short peduncle covered by 1-3, tubular bracts, flowers similar in color but the lip is marked by irregular reddish spots on the disc. *Epidendrum piliferum* Rchb.f. has a many-flowered apical, paniculate inflorescence (up to 400 flowers), sepals 12.5-17 mm long, green, the lip white, with 5 purple lines on the disc, and the ovary ornamented with moniliform trichomes.

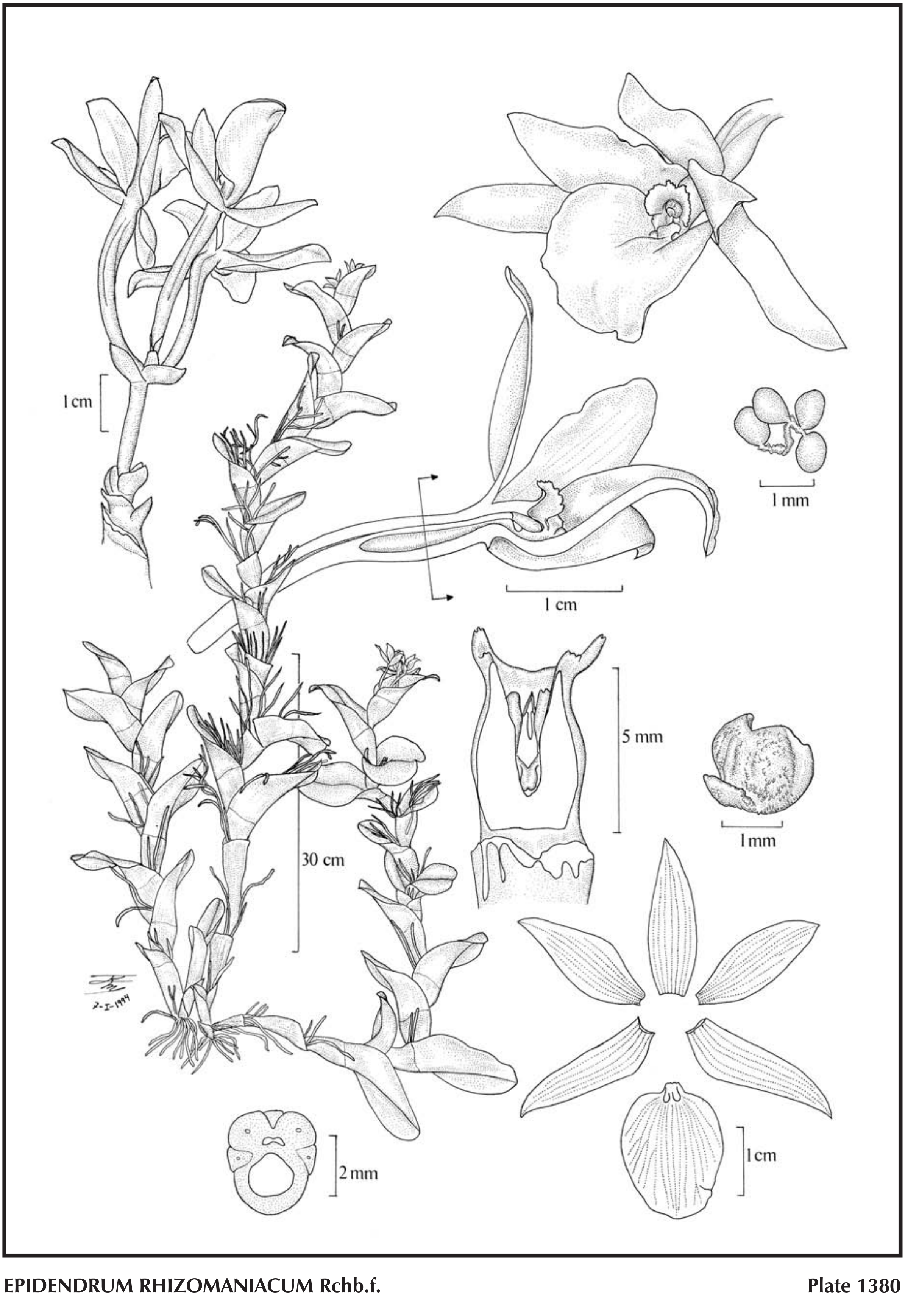


CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From, the Greek, φευδο, false, resembling but not equaling, and the Latin *panicula*, a branched inflorescence, in reference to the similarity of the flowers, especially in coloring of *Epidendrum paniculatum*.

REFERENCE: Misas, G., 2005. **Orquídeas de la Serranía del Baudó, Chocó, Colombia**; Bogotá, Colombia, p. 206-207.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM RHIZOMANIACUM Rchb.f. **Plate 1380**

EPIDENDRUM RHIZOMANIACUM Rchb.f., Otia Bot. Hamb. 12. 1878.

Type: ECUADOR: Guayaquil, 1 July 1876, ***F. C. Lehmann 101.*** Holotype: W-R 42440!

Hierba epífita, simpodial, cespitosa, 20-60 cm de alto incluyendo la inflorescencia. **Raíces** basales y de los nodos a lo todo largo de los tallos, filiformes, aparecen de entre las hojas, 0.3-0.7 mm de grosor. **Tallos** sencillos, tipo cañas, ancipitosos, ligeramente flexuosos, 17-49 x 0.7-1 cm. **Hojas** 5-9, equidistantes a lo largo del tallo; vaina foliar lateralmente comprimida, lisa, 1.5-3 cm de largo; lámina foliar anchamente ovada, ápice retuso a bilobado, lisa, no ornamentada, las hojas parecen vainas, infladas que cubren perfectamente bien al tallo dándole un aspecto ancipitoso, 5-10 x 2-5 cm. **Inflorescencia** apical en el tallo maduro, pedunculada, el pedúnculo, de 25 x 2-2.3 mm, terete; racemosa, florece sucesivamente, al llegar a la madurez un pedunculo se desarrollan 2 a 3 brotes nuevos en la base. **Bráctea floral** mucho más corta que el ovario, ovada, aguda, 6 x 3.7 mm. **Flores** 2-3 a la vez, produciendo racimos en sucesión por varios años del mismo tallo, resupinadas, blancas. **Ovario** inflado hacia el perianto, terete a oscuramente triquetro, no ornamentado, 30-50 x 1.6-2.3 mm. **Sépalos** glabros, libres, extendidos, subcoriáceos, agudos, 5-nervados con numerosas nervaduras secundarias, 18-23 x 6-7 mm; el **dorsal** elíptico, margen entero, extendido; los **laterales** oblicuamente lanceolados, margen ligeramente revoluto. **Pétalos** membranáceos, parcialmente extendidos, obovados, agudos, margen entero, extendido, 3-nervados con numerosas nervaduras secundarias, 18-23 x 7-8 mm. **Labelo** unido a la columna, obovado, oblongo, margen sinuado; callos dos, pequeños, laminares, se unen perfectamente al labelo de tal manera que parecen formar una plataforma; 15-25 x 13-16 mm. **Columna** recta, delgada, 6.8-8 x 2-2.5 mm; con prominencias laterales apicales laminares, con margen ligeramente eroso. **Clinandrio** prominente, cónico, entero, margen dentado, 1.3-1.5 mm de largo. **Antera** subesférica, con un pico al frente, 4-locular. **Polinios** 4, subiguales, ovoides, lateralemente comprimidos; caudículas suaves y granulosas, semejantes en longitud a los polinios; viscidio viscoso, translúcido. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** ocupando menos de 1/4 de la cavidad estigmática. **Nectario** penetrando menos de 1/2 del ovario, liso. **Cápsula** no vista.

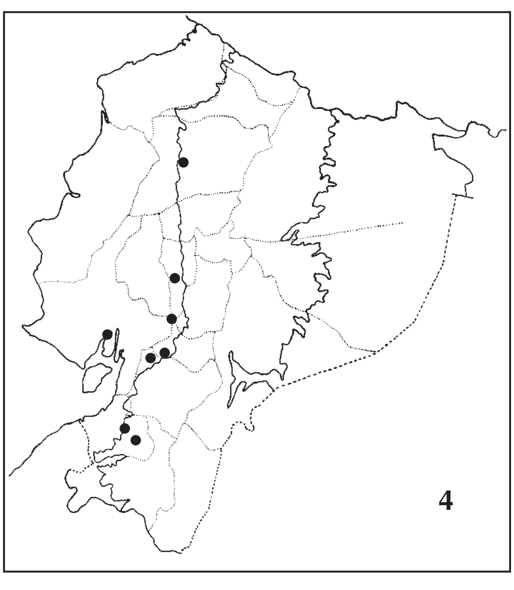
Epiphytic, simpodial, caespitose **herb**. **Root** basal and throughout the stems at the nodes and appearing to spring from within the base of the leaves, filiform. **Stems** simple, ancipitose, somewhat flexuose. **Leaves** 5-9, widerly ovate, retuse to bilobed, unornamented. **Inflorescence** apical, shortly pedunculate, racemose, producing new racemes with time. **Floral bracts** much shorter than the ovary, ovate, acute. **Flowers** 2-3 at a time, producing successive racemes over the years, resupinate, white. **Ovary** inflated to the perianth, terete to somewhat triquetrous, unornamented. **Sepals** glabrous, free, spread, sub-coriaceous, acute, 5-nerved with several lateral veins, the **dorsal** elliptic, margin entire, spreading, the **lateral** sepals obliquely lanceolate, margin revolute. **Petals** membranaceous, spreading, obovate, acute, margin entire, 3-nerved with several lateral veins. **Lip** united to the column, obovate, oblong, margin sinuate; bicallose, the calli small, laminar. **Column** stright, thin, with two prominent lateral process, margin erose. **Clinandrium-hood** prominent, conic, entire, margin dentate. **Anther** sub-spheric, 4-celled. **Pollinia** 4, sub-equal, ovoid, laterally compressed; caudicles soft and granular, similar in size to the pollinia; viscidium viscose, translucid. **Rostellum** sub-apical, slit. **Nectary** penetrating one half of the ovary, smooth.

OTHER SPECIMENS: ECUADOR: Without locality, *OIC 2915*, SEL! cult. Selby Bot. Gard., SEL 85-11, *Christenson 1418*, SEL! **Azuay:** Cuenca, Molleturo, Manta Real, 500 m, 3 IX 1992, *Berg 82*, QCNE! **Azuay/Cañar:** Manta Real: Rio Patul, Zhucay-Rio Patul, 450-800 m, 13 VII 1991, *Foster 13485*, F! QCA! **Bolivar:** 90 km from Durán, Montalvo-Balzapamba, 300 m, 21 V 1960, *Dodson 79*, AAU! MOx2! QCAx2! SEL! US! Babahoyo-Guaranda, Balzapamba, km 46, 650 m, *Dodson 18683*, MO! **Chimborazo:** Just below Bucay, ca. 600 m, 14 VIII 1979, *Luer 3308*, SEL! **El Oro:** Hda. Daucay, La Vega Rivera, 500 m, 1 IV 1993, *Cornejo 27*, QCNE! 10 km W of Piñas, Piñas-Machala, 900 m, 19 VII 1979, *Dodson 8454 sub Hágsater 6074*, AMO! SEL! 13 km W Piñas, 780 m, 20 IX 1979, *Schupp 32*, SEL! Buenavista-Paccha, km 16.5, 250 m, 16 IV 1989, *Whitten 975*, QCNE! **Guayas:** Hda. La Elvira, ca 5 km W of Bucay, ca. 500 m, 6 VI 1979, *Løjtnant 15600*, AAU! **Loja:** Cerro La Merced, W slopes of Andes, 1650 m, 15 V 1962, *Marmol 20*, SEL! **Pichincha:** Hotel Zaracay, Santo Domingo, 650 m, 10 V 1977, *Dodson 6722*, MO! SEL! Road to Pallatanga, 7 IV 1978, *Pridgeon s.n.*, SEL!

OTHER RECORDS: ECUADOR: El Oro: 10 km W of Piñas, Piñas-Machala, 900 m, 19 VII 1979, *Dodson 8454 sub Hágsater 6074*, AMO! (Illustration voucher) flowers in spirit AMO! **PERU:** Without locality, 1000 m, *Rauh 53200*, Illustration AMO!

DISTRIBUTION AND ECOLOGY: Endemic to coastal plain of Ecuador. Epiphytic in rain forest, 300-1650 m altitude. Flowering May to December.

RECOGNITION: *Epidendrum rhizomaniacum* belongs to the Difforme Group which is characterized by the caespitose, sympodial plants, fleshy, pale green to glaucous leaves, apical inflorescence, sessile, rarely with a short peduncle, one-flowered to corymbose, without spathaceous bracts, fleshy, green to yellowish-green rarely white flowers. The species can be recognized by its ancipitose stems, roots from the basal and appearing to sprout from the leaves throughout the stems, 2-3 white, simultaneous flowers, ovate, oblong lip with sinuate margin, two laminar calli, clinandrium-hood prominent, conic with margin dentate. Vegetatively similar to the *Epidendrum apaganum* complex, but their flowers are very different in form, size and color and don't have roots in the nodes of the stems. *Epidendrum schunkei* D.E.Benn. & Christenson is vegetatively similar, also producing roots throughout the stems, the flowers however are brilliant green, sepals and petals lanceolate-acuminate, lip oblong-elliptic, apiculate, margin erose towards the apex, and the calli laminar, divergent.

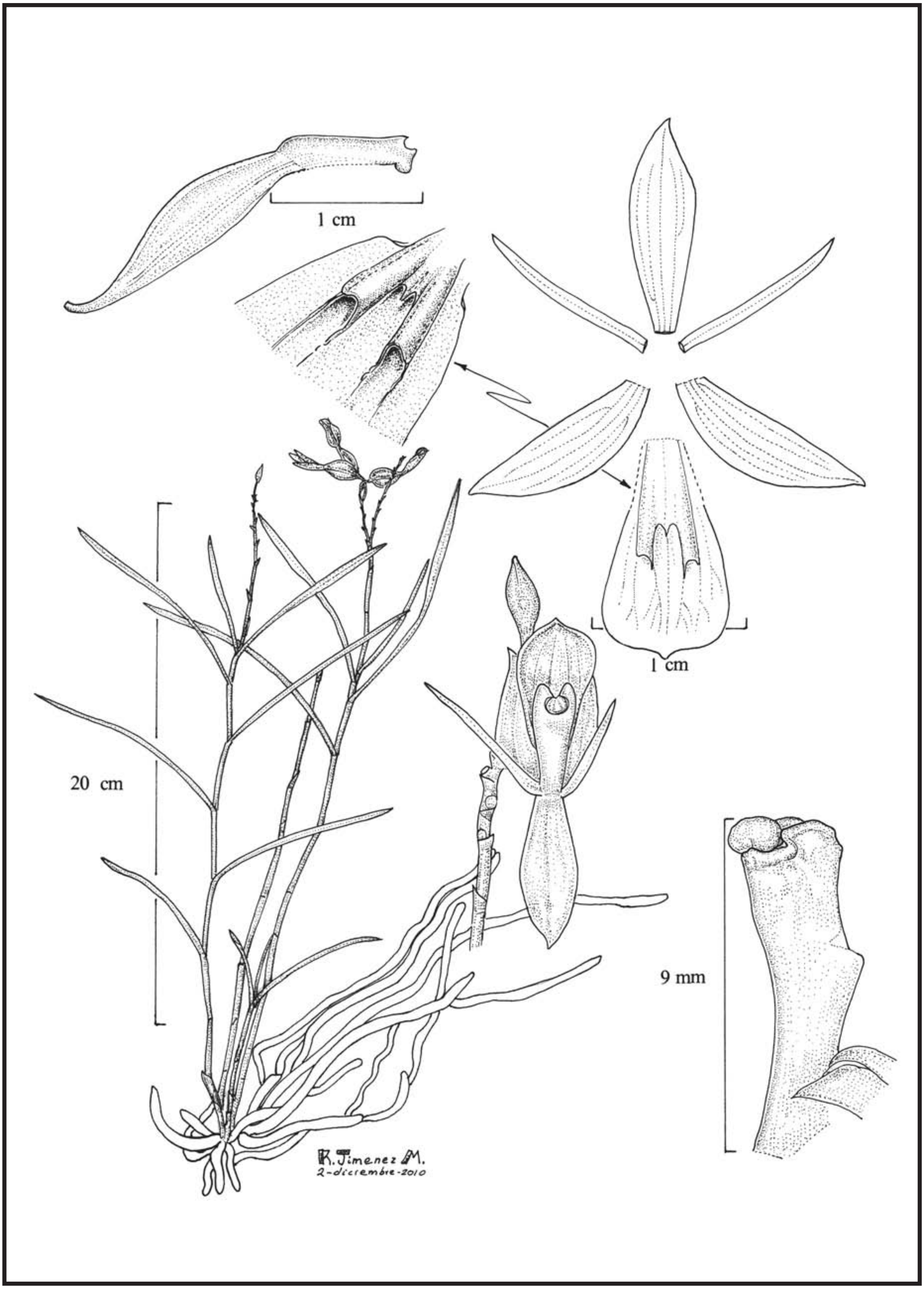


CONSERVATION STATUS: NT. Apparently not threatened, very common.

ETYMOLOGY: From the Greek ριξα, root, and μανια frenzy, in reference to the numerous roots produced throughout the stems and from the axils of the leaves.

REFERENCES: Dodson, H. C., & P. M. de Dodson, 1980, Orchids of Ecuador, **Icon. Plant. Trop.** 1: 94. Bennett, D. E. & E. Christenson, 1998. New species of Peruvian Orchidaceae V, **Lindleyana** 13(1): 48.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM ROTHII A.D.Hawkes **Plate 1381**

EPIDENDRUM ROTHII A.D.Hawkes, Orquídea (Río de Janeiro) 18(5): 173. 1956.

Basionym: *Epidendrum juncifolium* Schltr., Repert. Spec. Nov. Regni Veg., Beih. 7: 135. 1920. Type: COLOMBIA: Cauca, 1500 m, ***M. Madero s.n.*** Holotype: B, destroyed. (Illustration of flower, Mansfeld, 1929.) Neotype (here designated): COLOMBIA: Cauca: La Topa, Popayan, 1200-1500 m, ***F. C. Lehmann 7306***. AMES! Isoneotype: NY! (illustration, AMO!) [Not *E. juncifolium* L., 1763=*Trichocentrum cebolleta* (Jacq.) M.W.Chase & N.H.Williams]

Synonym: *Epidendrum cryptoglossum* Pabst, *syn.nov.* Bradea 2(12): 67. 1976. Type: BRAZIL: Goiás, [Corumbá de Goiás] Serra dos Pirineus, 18 km E Pirenopolis, 1000 m, 18 January 1972, ***H.S. Irwin, N.R. Anderson, M. Stieber & T. Lee 34506***. Holotype: UB! (Illustration voucher).

Hierba epífita, cespitosa, erecta, 12-45 cm de alto. **Raíces** basales, carnosas, gruesas, lateralmente comprimidas, blancas, 3-6 mm de grosor. **Tallos** sencillos, tipo caña, teretes, delgados, erectos, algo flexuosos, 13-35 x 0.1-0.3 cm; la base cubierta por 2-3 vainas tubulares no foliares, escariosas y fibrosas con el tiempo, 20-33 mm de largo. **Hojas** (3) 5-9, distribuidas a lo largo de los 2/3 apicales de los tallos, alternas, articuladas, extendidas en tallos jóvenes a suberectas y arqueadas en tallos maduros; vaina tubular, finamente estriada, 1-2.5 x 0.2-0.3 cm; lámina linear subulada, obtusa, conduplicada, margen entero, 2.7-14.5 x 0.15-0.3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, del tallo maduro, racemosa cuando joven (produciendo racimos adicionales de diferentes nudos de la misma inflorescencia y entonces pluriracemosa con el paso del tiempo) erecta, pauciflora, laxa, 6.5-8 cm de largo; pedúnculo recto, lateralmente aplanado a ligeramente ancipitoso, 3-5 cm de largo; provisto en la parte media de un par de brácteas, (semejantes a las florales pero algo más grandes) tubulares en la base, conduplicadas en el ápice, agudas, amplexicaules, 5-10 mm de largo; raquis incipientemente fractiflexo, ancipitoso, 1.5-8 cm de largo. **Brácteas florales** más cortas que el ovario, deltoides, agudas, amplexicaules, 1-2.5 x 0.2-0.3 mm. **Ovario** terete, delgado, no inflado, no ornamentado, 8-15 x 0.5 mm. **Flores** 3-34 por racimo, sucesivas, 1 a 2 abiertas a la vez, no-resupinadas, glabras, verdes, concoloras; fragancia no registrada. **Sépalos** entreabiertos, oblongo-oblanceolados, subacuminados, 3-5-nervados, margen entero, 9-15 x 3.5-5 mm; el **dorsal** libre; los **laterales** oblicuos, [connados en el 1/3 basal, fide Schlechter]. **Pétalos** entreabiertos, libres, lineares, ligeramente arqueados, agudos, 1-nervados, margen entero, 9-14 x 0.8-1.1 mm. **Labelo** parcialmente unido a la columna, entero, obovado obcuneado, algo cóncavo, ápice retuso, diminutamente apiculado, margen apical eroso, 12-15 x 7-10 mm; ecalloso, disco con 5 quillas engrosadas, paralelas, delgadas, bajas, algo crestadas en la parte libre, entre las quillas se producen 2 pares de cunículos cubiertos por membranas transparentes, el par interior de 1/3 del largo del labelo, el par exterior de la mitad del largo del labelo. **Columna** unida al labelo en los 2/3 basales, muy ligeramente arqueada hacia arriba, delgada en la base, el ápice gradualmente más amplio y con un par de alas redondeadas y trucadas en el ápice, 7-8 x 2 mm. **Clinandrio** corto, margen entero. **Antera** reniforme, 4-locular. **Polinios** 4, obovoideos, lateralmente comprimidos; caudículas suaves y granulosas, mas largos que los polinios. **Rostelo** apical, hendido. **Cavidad estigmática** obovada, lóbulos laterales más cortos. **Nectario** no visto. **Cápsula** ovoidea a elipsoidea, con el perianto persistente; pedicelo 3.6 mm de largo; cuerpo 11-15 x 8.6 mm; cuello apical, 11 mm de largo.

Epiphytic, caespitose, erect **herb. Roots** basal, fleshy, thin, white, laterally compressed. **Stems** simple, cane-like, terete, thin, erect, somewhat flexuous; the base covered by non-foliar, scarious sheaths, becomming fibrous with time. **Leaves** (3)5-9, distributed towards the apical 2/3 of the stems, alternate, articulate, spreading and arching, on young stems, sub-erect and arching inwards on mature stems; sheaths tubular, minutely striated; blade linear-subulate, sub-acute, conduplicate, margin entire. **Inflorescence** apical, racemose at first flowering, (producing new racemes from different nodes of the same inflorescence and thus pluri-racemose with age), erect, lax, few-flowered; peduncle straight, laterally compressed to somewhat ancipitose, provided in the middle with a pair of bracts, similar to the floral bracts but larger, tubular at the base, conduplicate towards the apex, acute, amplexicaul; rachis somewhat fracti-flex, ancipitose. **Floral bracts** shorter than the ovary, deltoid, acute, amplexicaul. **Ovary** terete, thin, not inflated, smooth. **Flowers** 3-34 per raceme, successive, non-resupinate, glabrous, green, concolor. **Sepals** partly spreading, oblong-oblanceolate, sub-acuminate, 3-5-veined, margin entire; dorsal sepal free, lateral sepals oblique, connate along the basal 1/3. **Petals** partly spreading, free, linear, oblique, acute, 1-veined, margin entire. **Lip** partly united to the column, entire, obovate-obcuneate, somewhat concave at the base, apex retuse, minutely apiculate; ecallose, disc with 5 parallel, thin, low keels, between the keels there are 2 pairs of cunicula covered by transparent membranes, the inner pair shorter than the outer pair. **Column** united tomthe lip along 2/3, slightly arching upwards, base thin, apex gradually dilated, with a pair of sub-quadrate, truncate wings at the apex. **Clinandrium-hood** reduced, margin entire. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose, longer than the pollinia. **Rostellum** apical, slit. **Capsule** ellipsoid, perianth persistent, pedicel short, apical neck long.

OTHER SPECIMENS: COLOMBIA: Tolima: Dolores, 1000-1600 m, III 1892, *Lehmann 7306**, K-L! **BRAZIL: Distrito Federal:** próxima da Fercal, 21 XII 1989, *Bianchetti s.n.* CEN 14985! **Goiás:** Lago Corumbí, 832 m, 30 III 2005, *Amaral-Santos 2571,* CEN! digital image, AMO!

OTHER RECORDS: BRAZIL: Goiás: Cocalzinho de Goiás, Fazenda Santa Rita da Contagem Velha, *F. Carvalho Chagas s.n.* photographc series, AMO! Color photo in Menezes, L.C., 2004, **Orchids of the Brazilian Central Plateau** pg. 149, IBAMA, Brasilia. (Illustration voucher, flower in natural position).

***NOTE:** Though the specimen has the same number as the neotype, the collecting data are different, and thus, we are placing it among other specimens, and not as an isoneotype. As in other cases of XIX century collections, numbers often represented species, not a collection made at the same time and place.



DISTRIBUTION AND ECOLOGY: Known only from the upper reaches of the basin of the Río Magdalena in southern Colombia, on both the Eastern and Central Cordilleras, surrounding the province of Huila, epiphytic at 832-1600 m altitude; Brazil, endemic from the nuclear region of the *Cerrado* biome in the Distrito Federal and Goiás, 800-1500 m, xerophytic, specifically on top of tree tops, and trunks, in phytophysiognomy *"mata de galeria"* (gallery forest) sorrounded *"cerrado s.s."* (typical savanna). Flowering in December to March. Such disjunct distributions between the Andes and the Plananto Central Brasileiro are not unknown.

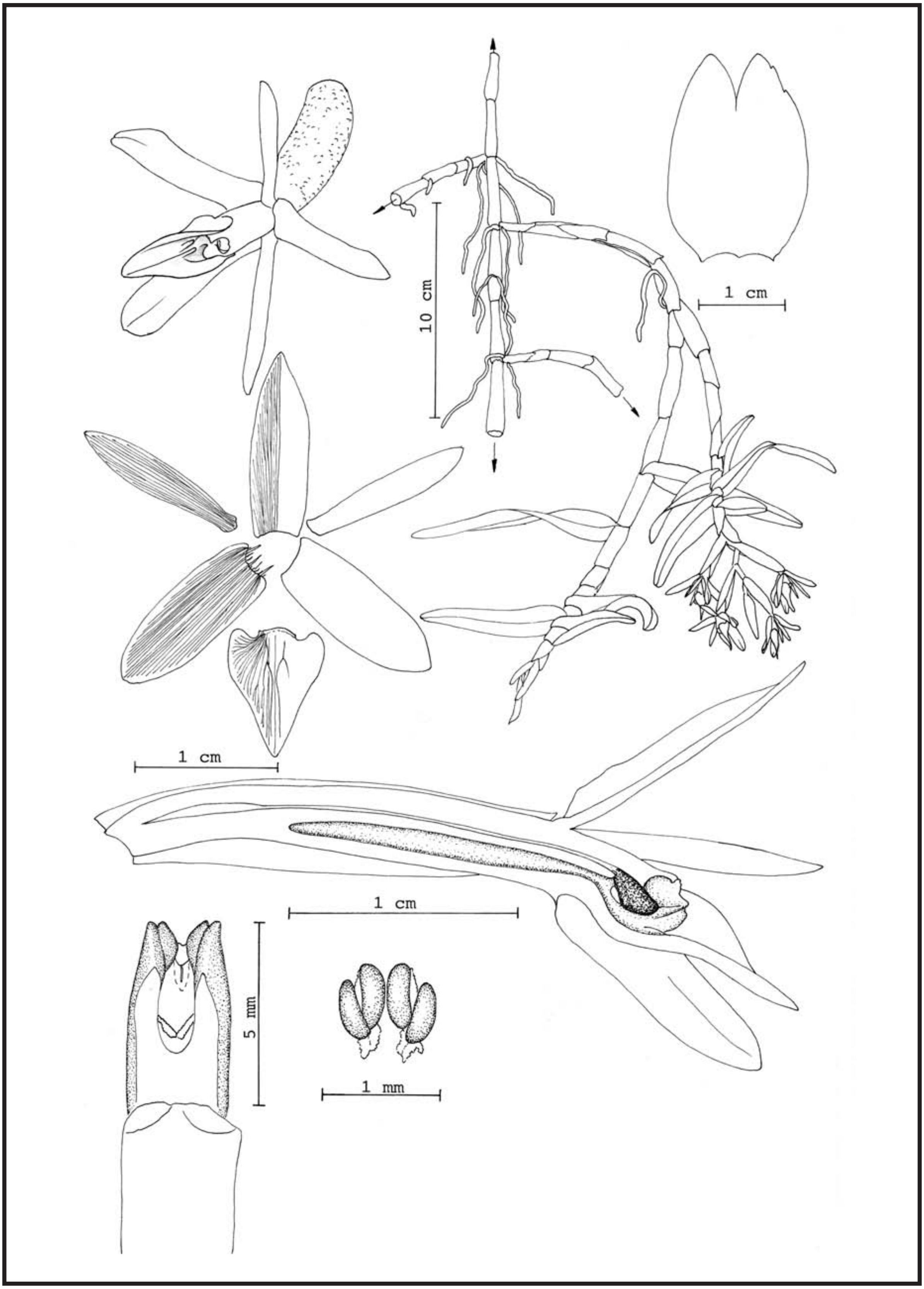
RECOGNITION: *Epidendrum rothii* belongs to the rothii group, characterized by the caespitose habit, and the ecallose lip with low keels and 4 cunicula formed between the keels, with only this species known to date. The caespitose, sympodial habit, with a single initial raceme, which then produces new lax-flowered racemes from the nodes of the inflorescence is reminiscent of the Anceps group, Polyanthum sub-group, but that sub-group has wide, laminar leaves, and the lip is 3-lobed. The species is recognized by the narrow subulate leaves, pluri-racemose inflorescence, racemes lax-flowered, the column partly united to the lip, filiform petals and obovate-obcuneate lip, the apex truncate and apiculate, ecallose and the 5 keels producing 4, unequal cunicula covered by thin membranes. *Epidendrum ramosissimum* Ames & C.Schweinf. has similar leaves, but the habit is monopodial and branched, and the inflorescence racemose and distichous, the few flowers small, with a fleshy cordiform, acuminate lip. *Epidendrum angustissimum* Lindl. has a monopodial branching architecture, with a straight main stem and short branches, the inflorescences are arching-nutant, racemose, distichous and flower only once, sepals 5-6.7 mm long, the lip is 3-lobed. Young plants may be confused at first sight with *Jacquiniella teretifolia* (Sw.) Britton & Wilson.

CONSERVATION STATUS: DD. Data deficient. In Brazil probably B2ab(iii).

ETYMOLOGY: In honor of Mr. Jack M. Roth, of North Hollywood, California, who materially assisted the author, Alex D. Hawkes, in the compilation of his nomenclatorial notes on *Epidendrum*.

REFERENCES: Batista, J. A. N., & L. B. Bianchetti, 2003, Lista atualizada das Orchidaceae do Distrito Federal. **Acta Botanica Brasilica** 17(2): 183-201. Mansfeld, R., 1929, **Repert. Spec. Nov. Regni Veg., Beih.** 57: t. 48, nr. 183. Menezes, L. C., 2004, **Orquídeas do Planalto Central Brasileiro**. Edições IBAMA, Brasília. Pabst, G. F. J., 1976, Additamenta ad Orchideologiam Brasiliensem – XXI. **Bradea** 2(12): 65-70.

Authors: E. Hágsater & Thiago E. C. Meneguzzo **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM SANTACLARENSE Ames Plate 1382

EPIDENDRUM SANTACLARENSE Ames, Schedul. Orchid. 4: 49. 1923.

Type: COSTA RICA: Cartago: Santa Clara, 6000-6500 ft, ***Charles H. Lankester & Alfredo Sancho 443.*** Holotype: AMES 23727!

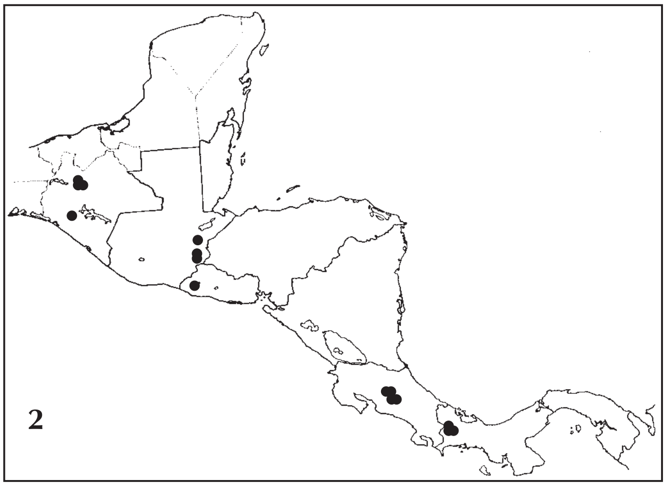
Hierba epífita, colgante, simpodial y algo ramificada, hasta 150 cm de alto. **Raíces** producidas de la base de la planta y escasas de los tallos sucesivos, carnosas, delgadas, 1.0-1.5 mm de grosor. **Tallos** relativamente cortos, colgantes, algo ramificados, tipo caña, teretes, delgados, rectos, sucesivos, sin un tallo principal propiamente dicho; cada tallo produce uno o dos tallos nuevos de un entrenudo intermedio, 12-36 x 0.4-0.5 cm. **Hojas** 9-12, distribuidas a lo largo de los tallos; vaina tubular, rugosa, hasta 2 cm de largo; lámina oblongo ligulada, ápice obtuso a bilobado, margen entero, subcoriácea, lisa, verdes, desigual, de 4-12 x 1.0-2.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, un racimo dístico abierto, 6-8 cm de largo; pedúnculo corto, cubierto por 2 brácteas, imbricadas, tubulares, obtusas, de 1.5-2 cm de largo, raquis sinuosa. **Brácteas florales** del mismo largo a ligeramente más cortas que el ovario, no imbricadas, ovadas, redondeadas, conduplicadas, tubulares en posición natural, verde oscuro con puntos pardos, 20-25 mm de largo. **Flores** 6-10, simultáneas, resupinadas, verde oscuro, tornándose amarillo verdosas. **Ovario** no inflado, terete, verrugoso, 20-30 mm de largo. **Sépalos** extendidos, libres, ligeramente verrugosos dorsalmente, subcoriáceos, lanceolados a ligulados, agudos, 12-nervados, margen entero, revoluto, 10-14 x 3-4 mm. **Pétalos** extendidos, membranáceos, linear oblongo, obtusos a redondeados, 5-nervados, margen entero, extendido, 10-17 x 1.5-2.5 mm. **Labelo** unido a la columna, entero, carnoso, triangular, base cordada, ápice redondeado, margen entero, 9-12 x 4-7 mm; callo en forma de "V" prolongándose en una carina central, prominente, disco con venas radiales bajas en la base. **Columna** recta, corta, 6-8 mm de largo. **Clinandrio** reducido, margen diminutamente dentado. **Antera** suborbicular, aplanada dorsalmente, con dos procesos petaloides hacia el frente, cortos y redondeados, 4-locular. **Polinios** 4, alargados, lateralmente comprimidos, subiguales; caudículas más cortas que los polinios; viscidio semilíquido, transparente. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** prominentes, de 1/2 del largo de la cavidad estigmática. **Nectario** profundo, penetrando 2/3 del ovario, no ornamentado. **Cápsula** ovoide, verrugosa, pedicelo corto, 2 x 3 mm, cuerpo 17 x 11.5 mm, cuello 8 x 2.5 mm.

Epiphytic, pendent, simpodial, somewhat branching **herb. Roots** produced at the base the plant and scarce at the base of successive stems, fleshy, thin. **Stems** pendent, somewhat branching, cane-like, terete, thin, straight, successive, each stem producing one or two new stems from a middle internode. **Leaves** 9-12, distributed throughout the stems; sheath tubular, rugose; blade oblong-ligulate, apex obtuse to bilobed, margin entire, sub-coriaceous, smooth, green, unequal, the basal and apical leaves shorter. **Inflorescence** apical, an open distichous raceme; peduncle short, covered by 2, imbricating bracts, tubular, obtuse; rachis sinuous. **Floral bracts** as long as or somewhat shorter than the ovary, not imbricating, ovate, rounded, conduplicate, tubular in natural position, acute, deep green dotted with brown. **Flowers** 6-10, simultaneous, resupinate, deep green, turning yellowish green. **Ovary** terete, verrucose, long. **Sepals** spreading, free, slightly verrucose dorsally, sub-coriaceous, lanceolate to ligulate, acute, 12-veined, margin entire, revolute. **Petals** spreading, membranaceous, linear-oblong, obtuse to rounded, 5-veined, margin entire, spreading. **Lip** united to the column, entire, fleshy, triangular, the base cordate, apex rounded, margin entire; callus "V" shaped, prolonged into a prominent, central keel; disc with radiating low veins at the base. **Column** straight, short. **Clinandrium-hood** reduced, margin minutely dentate. **Anther** sub-spherical, dorsally flattened, with a pair of short, rounded, petaloid processes at the apex, 4-celled. **Pollinia** 4, elongate, laterally compressed, sub-equal; caudicles shorter than the pollinia; viscidium semi-liquid, transparent. **Rostellum** subapical, slit. **Nectary** deep, penetrating 2/3 of the ovary, smooth. **Capsule** ovoid, verrucose, pedicel short, with a long apical neck.

OTHER SPECIMENS: See appendix.

DISTRIBUTION AND ECOLOGY: Known from Mexico (Chiapas), Guatemala, El Salvador, Costa Rica and Panama; epiphytic in wet and cloud forests, at 900-2600 m altitude. Flowering from March to September, and occasionally with fruits and flowers from October to December.

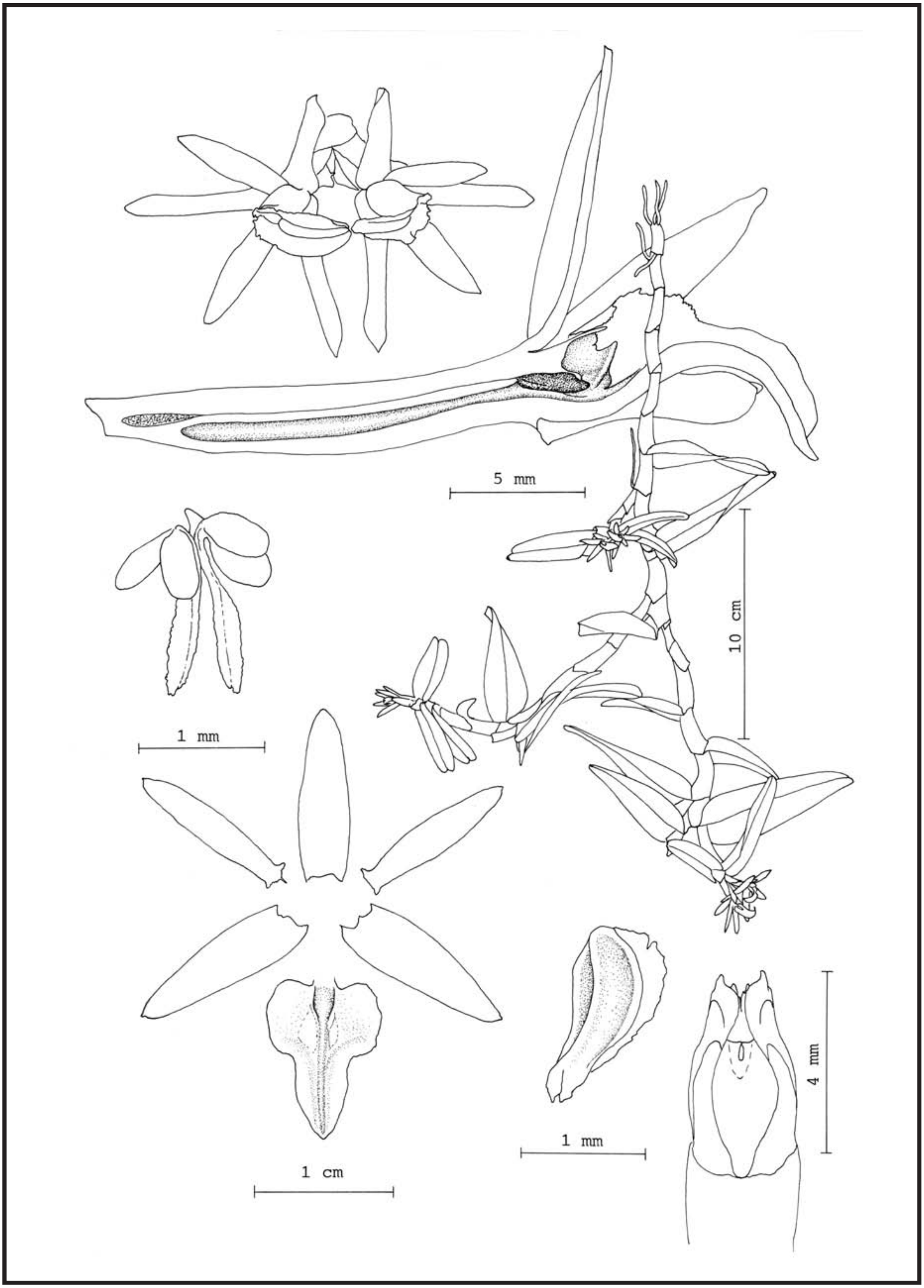
RECOGNITION: *Epidendrum santaclarense* Ames belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the Mirabile Subgroup which has pendent plants, successive stems produced from a middle internode of the previous stem, without any evident main stem; the flowers white to purple and mostly very fragrant. The species can be recognized by its large, pendent plants, the open, distichous inflorescences 6-8 cm long with 6-10 deep green flowers, the floral bracts not imbricating, tubular, deep green with brown dots, the ovary and dorsal surface of the sepals somewhat verrucose, lip cordate, triangular, and the anther dorsally flattened with a pair of short, rounded, petaloid processes at the apex. *Epidendrum mirabile* Ames & C.Schweinf. has 1-3 very large (sepals 25-36 mm long) and showy, purple-pink flowers with the disc and column white, the ovary inflated towards the base and the lip ovate-elliptic. *Epidendrum rafael-lucasii* Hágsater has wider leaves (1.6-3.6 cm wide), 2-4 greenish yellow flowers, the sepals dotted with brown outside and turning deep brown during flowering, sepals long (16-20 mm long), the lip triangular cordiform. *Epidendrum haberi* Hágsater has 2, white flowers, elliptic sepals and petals, sub-quadrate lip, callus a platform prolonged into a central, prominent keel. *Epidendrum cocoënse* Hágsater and *Epidendrum jimenezii* Hágsater have robust plants, but the former has and inflorescence with 3, lemon-yellow flowers, imbricating, conduplicate floral bracts, a cordiform lip, the latter has 1-3 white to greenish white flowers, a short ovary (10-14 mm long) and smaller floral segments (9.5-10 mm long).



2

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: The specific epithet refers to the locality of Santa Clara, in the province of Cartago, Costa Rica, where the type plant was collected.



EPIDENDRUM SCULPTUM Rchb.f. **Plate 1383**

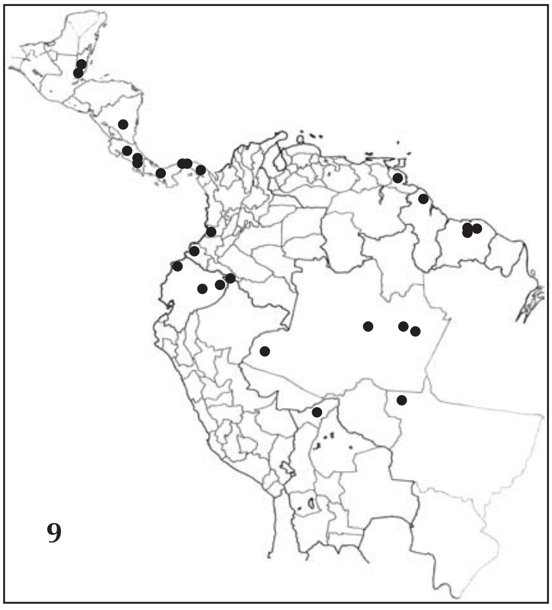
EPIDENDRUM SCULPTUM Rchb.f., Bonplandia. 2: 89. 1854.

Type: PANAMA: von Chagres, ***Keferstein***. Holotype: not found.

Synonyms: *Epidendrum sculptum* Rchb.f. var linearifolium Rchb.f., Linnaea 41:131. 1877; Type: SURINAM, W-R! *Epidendrum florijugum* Barb. Rodr., Gen. et Sp. Orch. Nov. 1: Tab. 3. fig. II. 57. 1877; Type: BRAZIL: Alto Amazonas: Habitat supra arbores in "igapós" ad Itucuara, ***Barbosa Rodríguez s.n.***, drawing K-L! *Epidendrum biflorum* Cogn., Bull. Herb. Boiss II, 2:337. 1902; Type: COSTA RICA: Serres de la Pierrière (Chambézy), ***Ad. Tonduz & W. Barbey s.n.***, G! (*Non* Forts., *nec* Ruiz & Pav., *nec* Barb. Rodr.) *Epidendrum boissierianum* Schltr., Beih. Bot. Centralb. 36(2): 459. 1918. *Epidendrum colonense* Ames, Sched. Orch. 1:14. 1922; Type: PANAMA: Colon: Río Indio de Fató, 24 August 1911, near sea level, ***Pittier 4265***, US 679376. Illustration at AMES. *Epidendrum sculptum* Rchb. f. var. *arevaloi* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 27: 74. 1924; Type: COLOMBIA: Caquetá: Umbria, umweit Mocoa, Juni 1921, 300 m, ***W. Hopp 108***, B, destroyed. *Huebneria yauaperyensis* auct. *non* Schltr. in Hoehne, Icon. Orch. Brasil. t. 99. 1949.

Hierba epífita, colgante, ramificada, hasta ca. 100 cm de alto. **Raíces** producidas de la base del tallo principal y de algunas ramas, carnosas, 1-1.5 mm de grosor. **Tallos** colgantes, ramificados, tipo caña, teretes, flexuosos, densamente foliados, el principal de 30-50 [100] x 0.4-0.7 cm, con hojas de 3-6.5 x 1-2.5 cm, las ramas cortas con 3-5 hojas desiguales, producidas del tallo principal, y de un internodo subapical de otros crecimientos secundarios, de manera que forman cadenas largas de ramas, 10-30 x 0.5-0.7 cm, con hojas de 2-6 x 0.5-2 cm. **Hojas** 7-12, equidistantes a lo largo de los tallos y las ramas, ligeramente recurvadas y onduladas, verdes; vaina tubular, rugosa, 0.7-2 cm de largo; lámina, oblongo elíptica, retusa a bilobada. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, dística, sésil. **Brácteas florales** ligeramente más cortas que los ovarios, ovadas, retusas, 0.9-10 mm de largo. **Ovario** terete, no ornamentado, 10-18 mm de largo. **Flores** (1)2-(3), simultáneas, el labelo siempre orientado hacia la raquis, verdes a verde amarillentas, sin fragancia. **Sépalos** entreabiertos, libres, glabros, lanceolados a angostamente lanceolados, obtusos, 5-7 nervados, con numerosas nervaduras secundarias, dando la apariencia de ser 12-nervados, margen entero, revoluto, 9-15 x 2-3 mm; los **laterales** oblicuos. **Pétalos** entreabiertos, libres, glabros, lineares a linear elípticos, obtusos, 3-nervados, con 4 nervaduras secundarias dando la apariencia de 7-nervados, margen entero, extendido, 9-14 x 1.5-3 mm. **Labelo** unido a la columna, base cordada, 9-14 x 5-7 mm, obovado lanceolado, oscuramente trilobado, agudo, doblado sobre su eje medio longitudinal abrazando la columna pero sin cubrirla, margen entero a ligeramente eroso; callo en forma de "Y" prolongándose en una vena central hasta el ápice del lóbulo medio; lóbulos laterales semiovados a semielípticos; lóbulo medio lanceolado a angostamente lanceolado, agudo, algo más de la mitad del largo total del labelo. **Columna** recta, corta, 2-4.5 mm de largo, con procesos laterales agudos. **Clinandrio** corto, margen eroso. **Antera** angostamente ovoidea, con dos procesos petaloides en el ápice, 4-locular. **Polinios** 4, lateralmente comprimidos, subiguales; caudículas del doble del largo que los polinios. **Lóbulo laterales del estígma** prominentes, de 1/2 del largo de la cavidad estigmática. **Nectario** prominente, penetrando mas de 3/4 del ovario, no ornamentado. **Cápsula** no vista.

Epiphytic, pendent, monopodial, branching **herb**. **Roots** produced from the base of the main stem and some branches, fleshy, thin. **Stems** pendent, branching, cane-like, terete, flexuous, densely foliose, the main stem long, with leaves throughout, the secondary stems short, with 3-5 unequal leaves, produced, from both the main stem and from a sub-apical internode of a previous secondary stem, which may thus appear longer, as chains of secondary stems. **Leaves** many throughout the main stem, 3-5 on secondary stems, slightly recurved and undulate, green; sheathes tubular, rugose; blade oblong-elliptic, retuse to bilobed. **Inflorescence** apical, racemose, distichous, sessile. **Floral bracts** slightly shorter than the ovary, ovate, retuse. **Ovary** terete, smooth. **Flowers** (1)2-(3), simultaneous, the lip always towards the rachis, green to yellowish green, without fragrance. **Sepals** partly spreading, free, glabrous, lanceolate to narrowly lanceolate, obtuse, 5-7-veined, with numerous secondary veins, appearing 12-veined, margin entire, revolute, the **laterals** oblique. **Petals** partly spreading, free, glabrous, linear to linear-elliptic, obtuse, 3-veined, with 4 secondary veins and appearing 7-veined, margin entire, spreading. **Lip** united to the column, base cordate, obovate-lanceolate, obscurely 3-lobed, acute, conduplicate and embracing the column without covering it, margin entire to somewhat erose; callus "Y" shaped, prolonged into a central keel extending to the apex of the lip; lateral lobes semi-ovate to semi-elliptic; mid-lobe lanceolate to narrowly lanceolate, acute, somewhat more than half the total length of the lip. **Column** straight, short, with a pair of acute lateral processes. **Clinandrium-hood** short, margin erose. **Anther** narrowly ovoid, with two petaloid processes at the apex, 4-celled. **Pollinia** 4, laterally compressed, sub-equal; caudicles twice as long as the pollinia. **Nectary** prominent, penetrating more than 3/4 of the ovary, smooth.



OTHER SPECIMENS: See appendix.

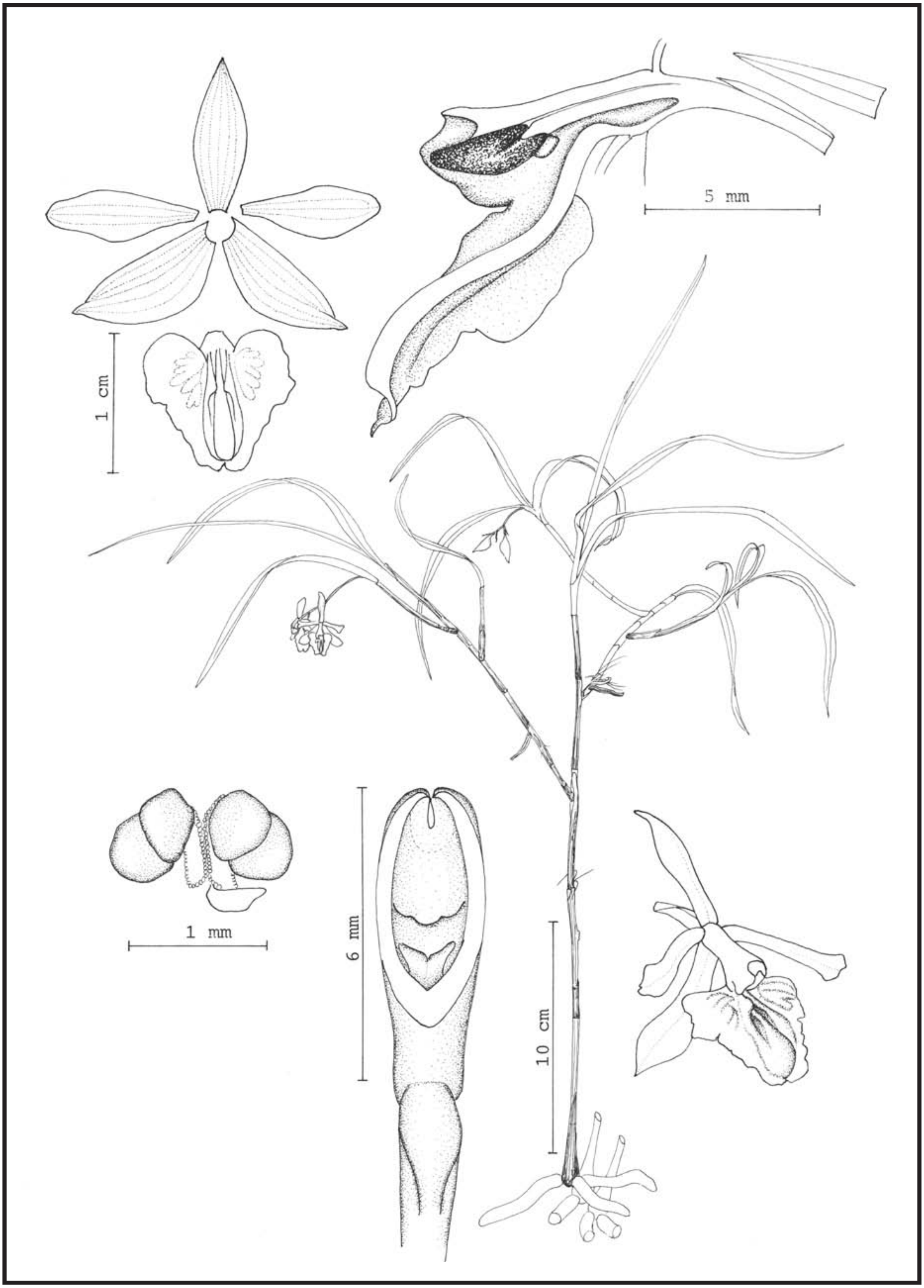
DISTRIBUTION AND ECOLOGY: Widely distributed species along the lowland Atlantic rain forest from Belize, through Honduras, Nicaragua, Costa Rica and Panama (in both also along the Pacific lowlands), down the Pacific mangroves to Esmeraldas in northern Ecuador, and along the Guyanas coastline to the Amazon basin in Brazil, Ecuador and Bolivia along the Madre de Díos, Amazon and Tocantins rivers; from mangroves at sea level to 500 m in very wet rain forest. Flowering throughout the year, but especially from June to December.

RECOGNITION: *Epidendrum sculptum* belongs to the Ramosum Group which is characterized by the monopodial, much branched stems, apical inflorescence, and distichous flowers; and Sculptum subgrup which has pendent plants and undulate, somewhat reflexed leaves. The species is recognized by the somewhat flexuose, densely foliate stems, the slightly reflexed leaves, apical, usually 2-flowered inflorescence, the lip obovate-lanceolate, somewhat 3-lobed, the lateral lobes somewhat erose, and the mid-lobe somewhat more than half the total length of the lip. It is very similar to *Epidendrum singuliflorum* Schltr., which is endemic to Mexico and Guatemala, and has non-recurved leaves, a one-flowered inflorescence and smaller floral segments, 8-12 mm long, the lip has entire margins, semi-orbicular lateral lobes and a triangular mid-lobe.

CONSERVATION STATUS: DD (Data deficient.)

ETYMOLOGY: From the Latin, sculptum, carved, probably in reference to the margin of the lip which is often erose.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM SKUTCHII Ames, F.T.Hubb. & C.Schweinf. **Plate 1384**

EPIDENDRUM SKUTCHII Ames, F.T.Hubb. & C.Schweinf., Bot. Mus. Leafl. 4: 1. 1936.

Type: GUATEMALA: Quiché: Nebaj, 6200 ft, 19 November 1934, ***Alexander F. Skutch 1715.*** Holotype: AMES 41510! Isotypes: AMES 41520! AMES 41596!

Hierba epífita, erecta, arbustiva, hasta 120 cm de alto. **Raíces** producidas en la base del tallo inicial, carnosas, gruesas, 3-4 mm de grosor. **Tallos** ramificados, heteromodulares por sustitución, los módulos distales disminuyendo marcadamente en tamaño en comparación con los basales, tipo caña, teretes, delgados, rectos, 6.4-27 x 0.1-0.3 cm; cubiertos casi en su totalidad por vainas tubulares (no foliosas) escariosas y fibrosas con el tiempo, 30-44 mm de largo. **Hojas** 2-4, agrupadas cerca del ápice de cada tallo, suberectas, articuladas, dísticas; vaina tubular, finamente estriada, 5-15 x 1-3 mm; lámina linear a linear lanceolada, acuminada, subcoriácea, margen entero, extendido, 5.5-17 x 0.3-0.9 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, arqueada, pauciflora, 4.5-6 cm de largo; pedúnculo filiforme, 3-4 cm de largo; provisto cerca de la base, de 1 a 2 brácteas (semejantes a las florales), linear lanceoladas, acuminadas, abrazadoras, 4-14 mm de largo; raquis corto, filiforme, fractiflexo, 1.5-2 cm de largo. **Brácteas florales** de menos de la mitad del largo del ovario a casi tan largas como este, linear lanceoladas, acuminadas, abrazadoras, membranáceas, 3-10 mm de largo. **Flores** 4-5, simultáneas, resupinadas, amarillo verdoso, finamente teñidas con púrpura rojizo, columna verde pálido con el ápice púrpura rojizo; sin datos de fragancia. **Ovario** terete, delgado, liso, con una vesícula ventral pequeña detrás del perianto, 7-10 mm de largo. **Sépalos** libres, 3-5-nervados, margen entero, algo revoluto; el **dorsal** reflexo, oblanceolado a oblanceolado elíptico, obtuso o subagudo, en ocasiones con un mucrón dorsal en el ápice, 10.5-12 x 3.5-4.5 mm; los **laterales** extendidos, unidos de manera oblicua a la base de la columna, lanceolado elípticos, oblicuos, con una quilla dorsal prominente, 11.3-12 x 4.1-5.4 mm. **Pétalos** libres, entreabiertos, oblanceolados, subagudos a redondeados, 3-nervados, margen entero, revoluto, 11-12 x 3.2-4.6 mm. **Labelo** unido a la columna, triangular ovado, algo constreñido hacia la parte media de la lámina por lo que da la apariencia de ser incipientemente trilobado, cordado en la base y ligeramente retuso en el ápice, algo convexo, margen eroso, excepto en la base, 8.1-11.2 x 9.5-13 mm; bicalloso, los callos laminares, cortos, (ocultos casi en su totalidad por el ápice de la columna); disco con múltiples venas engrosadas cortas y tres quillas carnosas, el ápice del par lateral fusionado a la quilla central formando junto con ésta una sola quilla prominente, ancha, carnosa y redondeada que se alarga hasta el ápice de la lámina. **Columna** recta, ligeramente engrosada hacia el ápice, 7 mm de largo. **Clinandrio** reducido, margen entero. **Antera** 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas casi del mismo largo que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** pequeños, de ¼ del largo de la cavidad estigmática. **Nectario** poco profundo, penetrando ligeramente detrás del perianto, formando una vesícula inflada, no ornamentado. **Cápsula** elipsoide, pedicelo delgado, 5-6 mm de largo; cuerpo 19-20 x 10-12 mm; cuello apical corto.

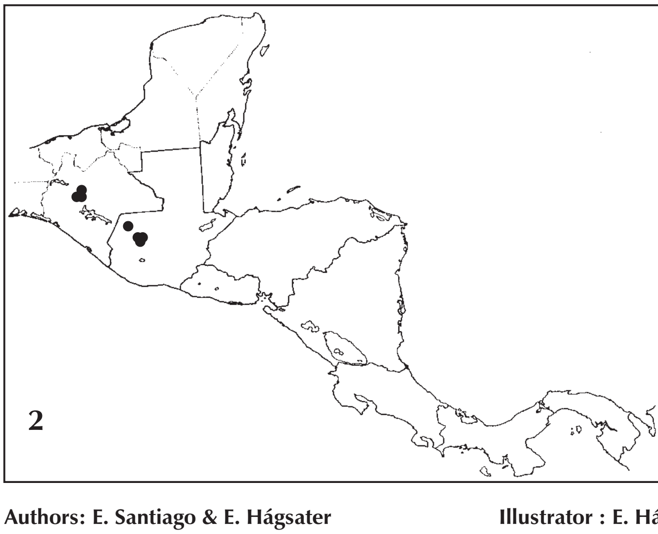
Epiphytic, erect, bushy, tall **herb**. **Roots** produced from the base of the primary stem, fleshy, thick. **Stem** branching, heteromodular by substitution, the distal modes diminishing markedly in size compared to the basal modules, cane-like, terete, thin, straight; nearly totally covered by tubular, non-leaf-bearing, sheaths, becoming scarious and fibrous with time. **Leaves** 2-4, aggregate near the apex of each stem, sub-erect, articulate, distichous; sheaths tubular, minutely striated; blade linear to linear-lanceolate, acuminate, sub-coriaceous, margin entire, spreading, about 15 times longer than wide. **Inflorescence** apical, flowering only once, racemose, arching, few-flowered; peduncle filiform, long, provided with 1-2 bracts near the base, the bracts linear-lanceolate, acuminate, amplexicaul; rachis short, filiform, fractiflex. **Floral bracts** less than half the length of the ovary to nearly as long, linear-lanceolate, acuminate, amplexicaul, membranaceous. **Flowers** 4-5, simultaneous, resupinate, greenish yellow, slightly tinged with reddish purple, column pale green with the apex reddish purple. **Ovary** terete, thin, smooth, with a small ventral vesicle behind the perianth. **Sepals** free, 3-5-veined, margin entire, somewhat revolute; dorsal sepals reflexed, oblanceolate to oblanceolate-elliptic, obtuse or subacute, sometimes with a dorsal, apical mucro; lateral sepals spreading, obliquely united to the base of the column, lanceolate-elliptic, oblique, with a prominent dorsal keel. **Petals** free, partly spreading, oblanceolate, sub-acute to rounded, 3-veined, margin entire, revolute. **Lip** united to the column, triangular-ovate, somewhat constricted towards the middle, and thus appearing somewhat 3-lobed, base cordate, apex slightly retuse, somewhat convex, margin erose, except at the base; bicallose, calli laminar, short (nearly totally hidden under the column; disc with multiple, short, thickened veins, and 3 fleshy keels, the two lateral keels fused at the apex with the mid-keel and forming a prominent, low, wide, thickened, rounded keel that runs to the apex of the lip. **Column** straight, slightly thickened towards the apex. **Clinandrium-hood** reduced, margin entire. **Anther** 4-celled. **Pollinia** 4, obovoid, laterally compressed, sub-equal, caudicles soft and granulose, nearly as long as the pollinia. **Rostellum** apical, slit. **Nectary** shallow, slightly penetrating the ovary behind the perianth, forming an inflated vesicle, smooth. **Capsule** ellipsoid, pedicel thin, short, apical neck short.

OTHER SPECIMENS: MEXICO: Chiapas: El Sumidero, pressed cult. 22 XI 1980, *Hágsater 6259*, AMO! (Illustration voucher). Ibid. 22 II 1983, AMO! Ibid. 19 IX 1984, AMO x2! Ibid. 16 X 1984, AMO x2! Ibid. 16 VIII 1986, AMO! Las Vistas, 1 II 1953, *Miranda 7681*, MEXU! **GUATEMALA: Huehuetenango:** Puente Alto, Barillas-Sta. Eulalia, 1800 m, 26 IV 1948, *Holdrige 2340*, F (x2)!

OTHER RECORDS: MEXICO: Chiapas: El Sumidero, 3600 ft, I 1963, *Pollard s.n.*, flower card, photos and notes, AMO! Ibid. 18 VI 1964, *Pollard K-19*, flower cards and photos in Pollard notes, AMO!

DISTRIBUTION AND ECOLOGY: Know only from southeastern Mexico (Chiapas) and Guatemala (Sierra de los Cuchumatanes), epiphytic at around 1100-1860 m altitude. Flowering June to April.

RECOGNITION: *Epidendrum skutchii* belongs to the Propinquum Subgroup which is characterized by the bush-like habit with thin stems, more or less narrow leaves, racemose, few-flowered inflorescence, and the mostly yellow or pale green flowers. The species is recognized by the plants up to 120 cm tall, linear to linear-lanceolate, grass-like, acuminate leaves, 5.5-17 x 0.3-0.9 cm; the ovary forming a short ventral vesicle behind the perianth, and the lip with radiating, thickened veins, the 3 central veins fused towards the apex. It is very similar to *Epidendrum propinquum* A.Rich. & Galeotti which has shorter, wider, narrowly elliptic leaves (3-13.5 x 0.4-1.7 cm), and the lip smooth, with only 3 simple, parallel keels running down the middle. *Epidendrum lignosum* La Llave & Lex. (syn. *E. ledifolium* A.Rich & Galeotti and *E. liparidoglossum* L.O. Williams) has shorter plants, to 40 cm tall, with linear-elliptic leaves, (1.3-8 x 0.3-0.9 cm) the apex rounded to obtuse, the inflorescence generally from an abortive, leaf-less growth, the lip smooth, with 3 low, parallel, central keels.



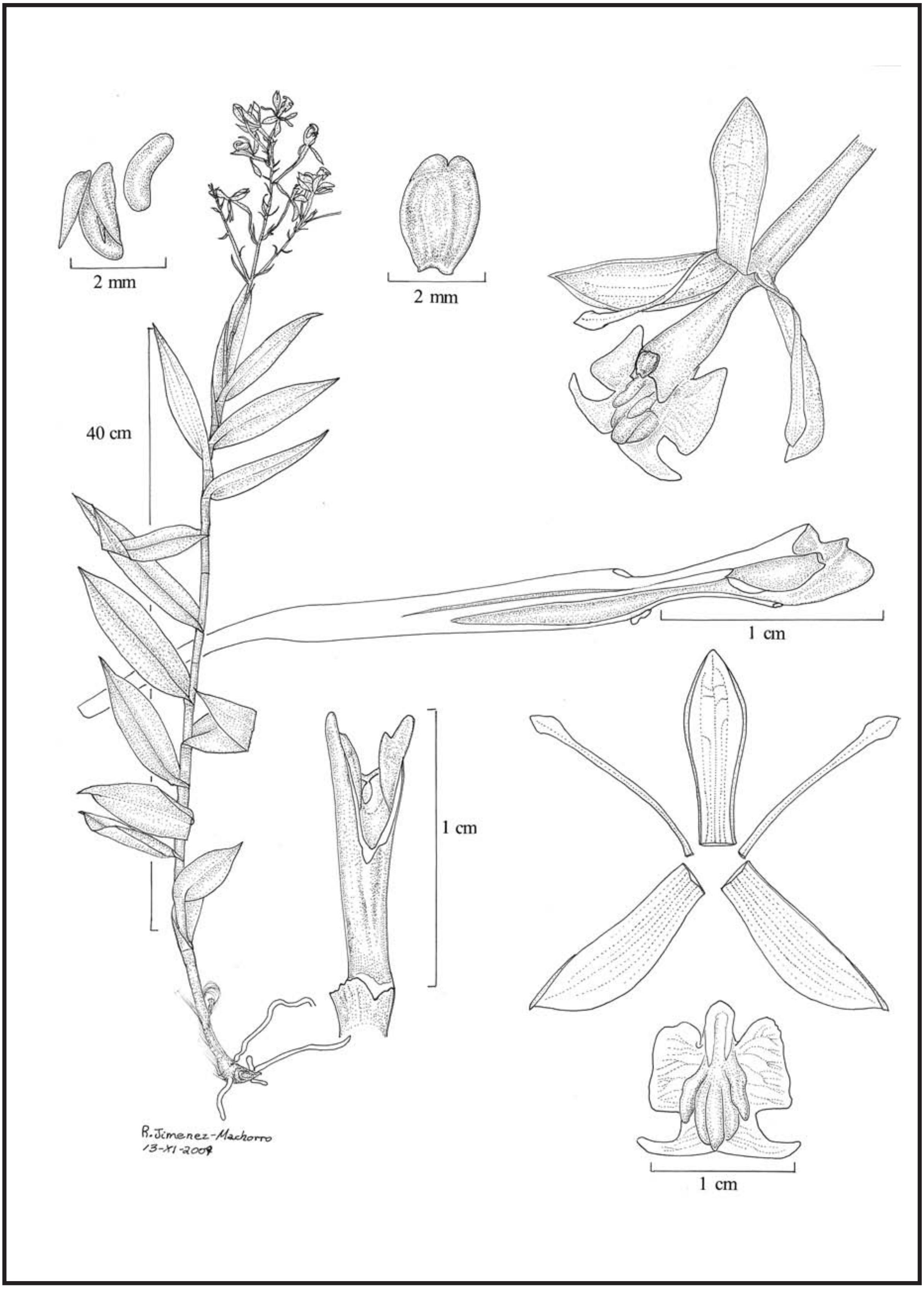
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CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Alexander Frank Skutch (1904-2004), philosopher, ornithologist and naturalist who collected orchids in Costa Rica and Guatemala between 1933 and 1940. In 1935 when he moved permanently to San Isidro del General in Costa Rica, his home of Los Cusingos has been transformed into a Bird Sanctuary. He married Pamela Lankester, daughter of Charles H. Lankester.

REFERENCE: Hágsater, E., 1980, Epidendra Mexicana Pollardiana 7; El Complejo *Epidendrum propinquum,* **Orquídea (Mexico City)** 7(4): 313-343.

Authors: E. Santiago & E. Hágsater **Illustrator : E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM SNEIDERNII Hágsater & E.Santiago **Plate 1385**

EPIDENDRUM SNEIDERNII Hágsater *et* E.Santiago, *sp. nov.*

Type: COLOMBIA: Cauca: El Tambo, La Costa in Silva prima, 2500 m, 9 July 1936, ***Kjell von Sneidern 802.*** Holotype: US! (Illustration voucher). Isotypes: F! G! NY! S!

Epidendro spathato Schltr. simile sed floribus majoribus, sepalis dorsaliter levibus, labello ad basem profunde cordato et ovario inflato.

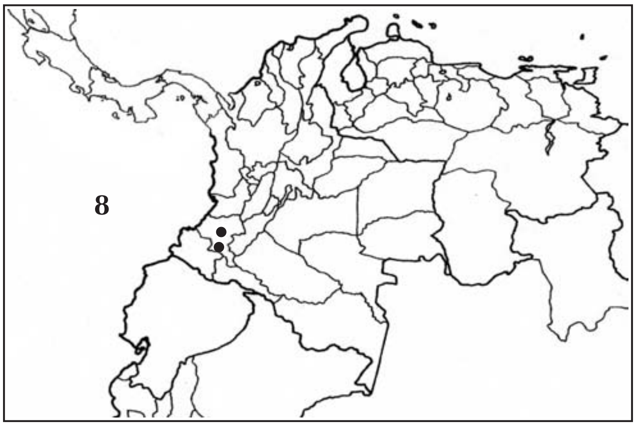
Hierba simpodial, cespitosa, 65 cm de alto. **Raíces** basales, carnosas, blancas, 1-2 mm de grosor. **Tallos** sencillos, lateralmente aplanados, 45 x 0.4-0.8 cm; la base con vainas tubulares no foliosas, fibrosas con el tiempo, 35 mm de largo. **Hojas** 17, distribuidas a lo largo del tallo, articuladas, dísticas; vaina tubular, finamente estriada, 1.5-3 x 0.4-0.7 cm; lámina elíptica, cortamente acuminada, margen entero, extendido, 6-12.5 x 1.9-3.2 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, paniculada, pauciflora, laxa, florece una sola vez, 19 cm de largo; pedúnculo lateralmente aplanado, 8.5 cm de largo; provisto de 2 brácteas tubulares, conduplicadas, algo ancipitosas, acuminadas, 3.5-4.5 cm de largo; raquis terete, con 2-4 racimos subextendidos con respecto al raquis; cada uno de ellos con una bráctea basal angostamente triangular, acuminada, 1.3-1.8 cm de largo. **Brácteas florales** más cortas que el ovario, triangular lanceoladas, largamente acuminadas, abrazadoras, 4-12 mm de largo. **Ovario** terete, ligeramente dilatado en la mitad apical, no ornamentado, 25-35 mm de largo. **Flores** 35, simultáneas, resupinadas, sin datos de color ni fragancia. **Sépalos** entreabiertos, libres, obtusos, carnosos, dorsalmente lisos, ligeramente cóncavos, margen entero, extendido, 14-15 x 3.8-4.3 mm; el **dorsal** oblanceolado espatulado, 5-nervado; los **laterales** oblanceolado elípticos, 7-nervados, ligeramente oblicuos. **Pétalos** entreabiertos, libres, linear filiformes, (anchos en el ápice), subobtusos, margen entero, 14.5 x 0.5 mm; [1.5 mm de ancho en el ápice]. **Labelo** unido a la columna, trilobado, profundamente cordado en la base, margen entero, extendido, 10 x 11.5 mm; bicalloso, los callos muy prominentes, carnosos, delgados, subcorniformes, alargados hasta la base del lóbulo medio; disco provisto de 3 quillas intercallosas prominentes, la central alargada hasta el ápice de la lamina; lóbulos laterales dolabriformes, 4.3 x 6.3 mm; lóbulo medio bilobado, fuertemente divaricado, cada lóbulo oblicuamente-triangular, con el ápice obtuso, 3.3 x 6 mm. **Columna** ligeramente dirigida hacia arriba, delgada en la base y dilatada en el ápice, ápice cortamente bialado, 10 cm de largo. **Clinandrio** reducido, margen entero. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando ½ del largo de la cavidad estigmática. **Antera** ovoide, 4-locular. **Polinios** 4, tipo ala de pájaro, el par interior más pequeño. **Nectario** penetrando 1/3 del ovario, no ornamentado. **Cápsula** no vista.

Sympodial, caespitose **herb**. **Roots** basal, fleshy, white, thin. **Stems** simple, laterally compressed; the base covered by non-foliar, tubular sheaths, becoming fibrous with time. **Leaves** 17, distributed throughout the stem, articulate, distichous; sheaths tubular, minutely striated; blade elliptic, short-acuminate, margin entire, spreading. **Spathaceous bract** lacking. **Inflorescence** apical, paniculate, lax, few-flowered, flowering only once; peduncle laterally compressed, provided with 2 tubular, long, conduplicate, somewhat ancipitose, acuminate, bracts; rachis terete, with 2-4 somewhat spreading racemes, each subtended by a narrowly triangular, acuminate bract. **Floral bracts** shorter than the ovary, triangular-lanceolate, long-acuminate, amplexicaul. **Ovary** terete, slightly dilated along the apical half, unornamented, long. **Flowers** 35, simultaneous, resupinate, without data on color. **Sepals** partly spreading, free, obtuse, fleshy, dorsally smooth, slightly concave, fleshy, margin entire, spreading; the dorsal sepal oblanceolate-spatulate, 5-veined; the lateral sepals oblanceolate-elliptic, 7-veined, slightly oblique. **Petals** partly spreading, free, linear-filiform, (wider towards the apex), sub-obtuse, margin entire, spreading. **Lip** united to the column, 3-lobed, base deeply cordate, margin entire, spreading; bicallose, the calli very prominent, fleshy, thin, somewhat horn-shaped, elongate to the base of the mid-lobe; disc provided with 3 prominent keels, the central keel elongate to the apex of the lip; lateral lobes dolabriform; mid-lobe bilobed, the lobes strongly divaricate, each lobe obliquely-triangular, the apex obtuse. **Column** slightly directed upwards, thin at the base, dilated towards the apex, apex short two-winged. **Clinandrium-hood** reduced, margin entire. **Rostellum** sub-apical, slit. **Anther** ovoid, 4-celled. **Pollinia** 4, "bird wing" type, the inner pair smaller. **Nectary** penetrating 1/3 of the ovary, unornamented.

OTHER SPECIMENS: COLOMBIA: Cauca: Popayan, 2000-2800 m, 7 II 1884, *Lehmann 3516*, G! **Nariño:** near Mayasquer, 2900 m, 2 VIII 1935, *Mexia 7568*, US!

DISTRIBUTION AND ECOLOGY: Known only from the Cordillera Central in southern Colombia, at 2000-2900 m altitude. Flowering in July to August.

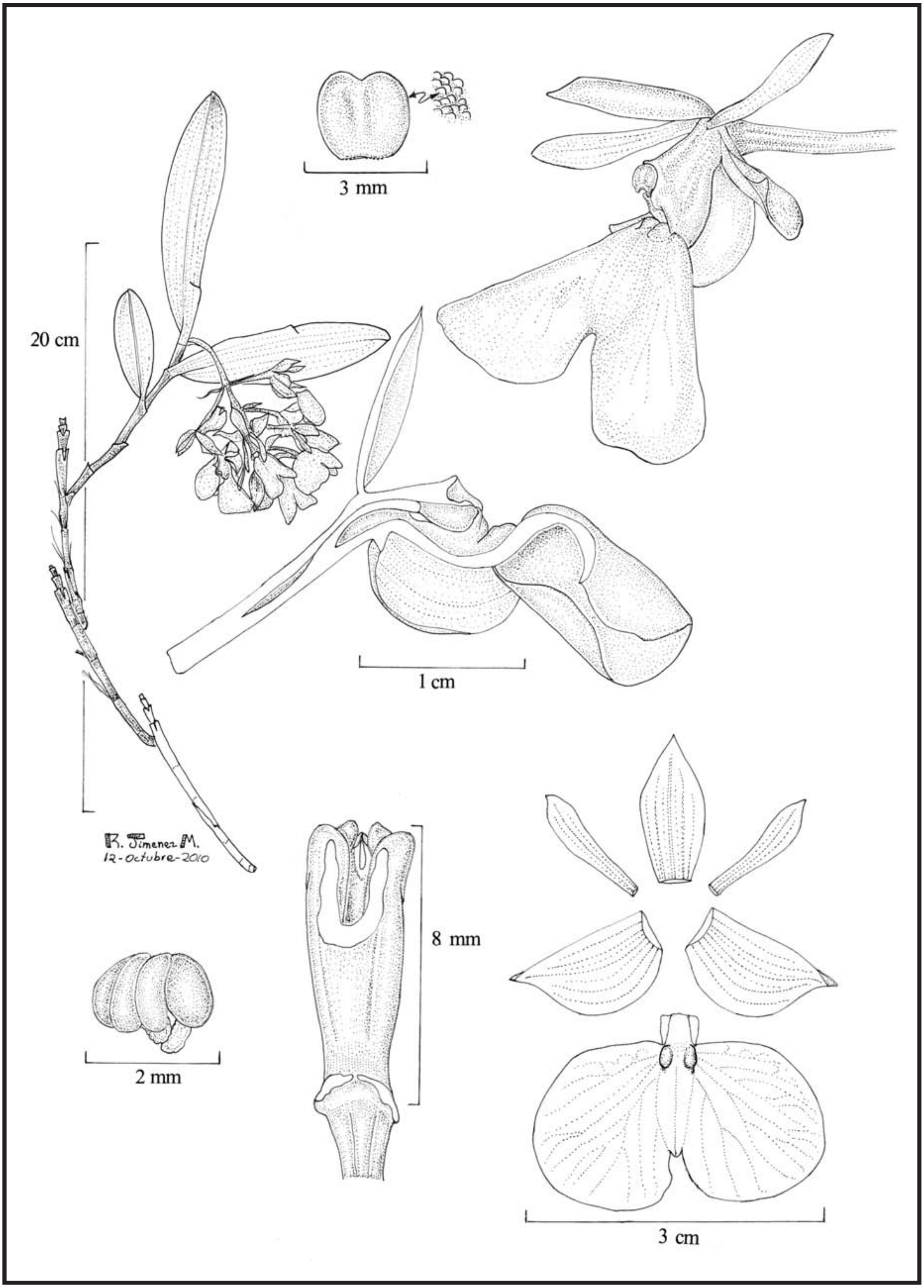
RECOGNITION: *Epidendrum sneidernii* belongs to Pseudepidendrum Group, Porphyreum Subgroup which is characterized by the caespitose habit, unbranched stems, apical, branched inflorescence, no true spathaceous bract, and the flowers with long, thin column, a 3-lobed lip with the midlobe generally bifid and divaricate, and filiform petals. The species is recognized by the few-flowered inflorescence, with 2-4 short, spreading branches, sepals dorsally unornamented, 14-15 mm long, the ovary somewhat inflated apically, and the 3-lobed lip with the base deeply cordate, and a pair of prominent, horn-like calli. *Epidendrum spathatum* has a many-flowered inflorescence with the branches nearly parallel to the rachis; orange colored flowers, sepals dorsally pustulate, 10-12 mm long, the ovary not inflated, and the 3-lobed lip with the base cuneate. *Epidendrum fastigiatum* Lindl. has a dense, many, small-flowered inflorescence (sepals 9 mm long), the lip with small, rounded lateral lobes, the lip narrower between the lateral lobes, than between the lobes of the midlobe, and the calli small, sub-globose. *Epidendrum x spathiporphyreum* Hágsater & Dodson has a dense inflorescence with branches nearly parallel to the rachis, the sepals dorsally verrucose, 11 mm long, and the ovary not inflated.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of *Kjell von Sneidern, S*wedish naturalist who directed the Museo de Historia Natural de la Universidad del Cauca (1940-1960), and collected numerous animal and plant specimens.

Authors: E. Hágsater & E. Santiago **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM SOTOANUM Karremans & Hágsater **Plate 1386**

EPIDENDRUM SOTOANUM Karremans & Hágsater, Lankesteriana (9): 405. 2010.

Type: COSTA RICA: Cartago: Finca Kiri, camino a la Reserva Natural de Tapantí, 1300-1400 m, col. 25 September 1996, pressed 12 June 1998, ***Luis Sánchez S., Javier García-Cruz, Dora Emilia Mora & Oscar Rodriguez 401***. Holotype: USJ! (Illustration voucher). Clonotype: Ibid. pressed 19 May 1997, AMO!

Hierba epífita, simpodial, erecta, cada tallo nuevo se origina de un entrenudo subapical del tallo anterior, hasta 50 cm de alto. **Raíces** basales, de la base del tallo primordial, gruesas, 3-4 mm de grosor. **Tallos** teretes, algo flexuosos, el nuevo tallo se produce de un internodo subapical del tallo anterior, por debajo de las hojas, 6-19 x 0.3-0.8 cm. **Hojas** 3[-5], agregadas hacia el ápice de cada tallo, desiguales en tamaño, generalmente la media más grande; vaina tubular, rugosa, 1.0-1.6 x 0.3-0.4 cm; lámina obovado elíptica, obtusa, de 4-10 x 1.3-2.8 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez de cada tallo; pedúnculo lateralmente comprimido y algo ancipitoso, 2 cm de largo. **Brácteas florales** de la mitad del largo del ovario, triangulares, agudas, 6-10 mm de largo. **Flores** 4-15, pardo verdosas a amarillas, columna verde, más oscura hacia la base, aparentemente sin fragancia. **Ovary** terete, liso, 12-18 mm de largo. **Sépalos** entreabiertos a extendidos, obovados, obtusos, 3-4-nervados, margen entro, extendido, sépalo dorsal 12-16 x 4-7.5 mm, sépalos laterales oblicuos, 13-18 x 7-9 mm. **Pétalos** entreabiertos a extendidos, angostamente obovados, obtusos, 3-nervados, margen entero, extendido, 11-14 x 2-4 mm. **Labelo** fuertemente bilobado, anchamente reniforme, anchamente emarginado, ligeramente convexo en posición natural, 10-17 x 20-30 mm; lóbulos laterales suborbiculares, el margen entero; bicalloso, los callos engrosados en la base y terminados en un par de quillas bajas y cortas. **Columna** algo arqueada en la base, corta, con un par de alas redondeadas, prominentes en el ápice, 7-8 mm de largo, 5 mm de alto en el ápice. **Clinandrio** recto, reducido, margen entero. **Anthera** obovoidea, 4-locular, 2.5 mm de ancho. **Rostelo** subapical, hendido. **Polinios** 4, obovoideos, lateralmente comprimidos. **Nectario** corto, sin penetrar el ovario, liso.

Epiphytic, simpodial, erect **herb**, the new stem originates from a sub-apical internode of the previous stem. **Roots** basal, from the basal stem only, fleshy, thick. **Stems** terete, somewhat flexuous, each new stem produced from a sub-apical internode of the previous stem, below the leaves. **Leaves** 3 [-5], aggregate towards the apex of the stem, unequal, the middle one usually larger; sheath tubular, rugose; blades obovate-elliptic, obtuse. **Inflorescence** apical, flowering only once from each stem; peduncle laterally compressed and somewhat ancipitose. **Floral bracts** half as long as the ovary, triangular, acute. **Flowers** 4-15, greenish brown or yellow, column green, darker at the base; apparently without fragrance. **Ovary** terete, smooth. **Sepals** partly spreading to spreading, obovate, obtuse, 3-4-veined, margin entire, spreading; dorsal sepal smaller than the laterals, lateral sepals oblique. **Petals** partly spreading to spreading, narrowly-obovate, obtuse, 3-veined, margin entire, spreading. **Lip** strongly bilobed, widely reniform, widely emarginate, slightly convex in natural position; lateral lobes sub-orbicular; margin entire; bicallose, the calli thickened at the base and ending in a pair of low, short keels. **Column** arching downwards at the base, short, ending in a pair of large, rounded wings at the apex. **Clinandrium-hood** straight, reduced, margin entire. **Anther** obovoid, 4-celled. **Rostellum** near the apex of the column, slit. **Pollinia** 4, obovoid, laterally compressed. **Nectary** short, without penetrating the ovary, smooth.

OTHER SPECIMENS: COSTA RICA: Cartago; Orosí valley, in orchard along timber road above El Muñeco, along Río Sombrero, 1500 m, 6 VI 1983, *Barringer 4167*, F! San Francisco, Muñeco, Finca Loma Verde y Jilguero, camino a Alto Belén, entre Sombrero y Quebrada Patarrá, 1430-1620 m, 23 V 2007, *Bogarín 3919*, spirit JBL!, illustration pulished in Lankesteriana. **Heredia:** Vara Blanca de Sarapiquí, between Poás and Barva volcanoes, 1770 m, II 1938, *Skutch 3510*, AMES! Ibid. 1950 m, II 1938, *Skutch 3526*, AMES! K-L! MO! Yerba Buena, NE of San Isidro, 2000 m, 22 II 1926, *Standley 49987*, AMES! US! Vara Blanca, 1400-1700 m, 27 VI 1978, *Todzia 332*, CR! **San José:** La Hondura, 1300-1700 m, 2 III 1924, *Standley 36573*, AMES! US!

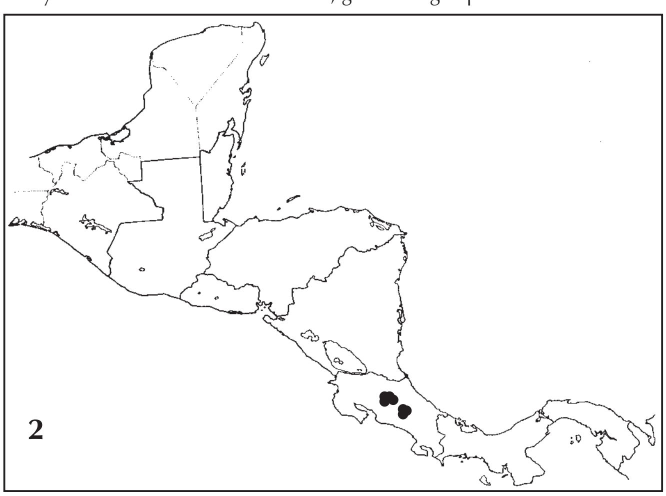
OTHER RECORDS: COSTA RICA: Alajuela: San Pedro de San Ramón, 1050 m, XI 1921, *Brenes 118***, B (destroyed), tracing of the floral details excluding the view of the whole flower; mounted on *Standley 36573*, AMES 29339! (Cited as type of *E. brenesii* by Barringer, 1986 and designated as lectotype of by Santiago & Hágsater, 2006, rejected elsewhere in this volume). **Cartago:** San Francisco, Muñeco, Finca Loma Verde y Jilguero, camino a Alto Belén, entre Sombrero y Quebrada Patarrá, 1430-1620 m, 23 V 2007, *Bogarín 3819*, JBL (spirit & digital image of live flower)! Digital image, AMO! Ibid. *Bogarín 3919*; spirit & digital image, JBL! digital image, AMO! Ibid. *Bogarín 3920*, spirit & digital image, JBL! digital image, AMO!

DISTRIBUTION AND ECOLOGY: Endemic to Costa Rica, on the Cordillera Central, along the Atlantic slope, and east to the upper basin of the Río Reventazón. Epiphytic in secondary humid premontane forest, at 1050-2000 m elevation. Flowering in February-June.

RECOGNITION: *Epidendrum sotoanum* belongs to the Arbuscula Group, Incomptum Subgroup, which is characterized by the successive lateral growths produced from the middle of the previous growth, few leaves aggregate towards the apex of the stems, a short apical inflorescence with fleshy greenish to violet-green flowers with short ovaries, the lip entire to 3-lobed. The species is recognized by the large greenish yellow flowers, the glabrous, very large, deeply emarginate lip 20-30 mm wide, and the apical rounded wings of the column. It is similar and has been confused with *Epidendrum brenesii* Schltr. which is known from upper ridge of the Cordillera Central and the inland slopes, its inflorescence has 8-12[40] violet-green flowers, a reniform, velutinous, short-emarginate lip, 15-19 mm wide. *Epidendrum bisulcatum* Ames, has shorter and narrower leaves, a smaller, sub-orbicular lip and linear petals. *Epidendrum incomptum* Rchh.f. which also occurs in Costa Rica can be distinguished by its 3-lobed, ecallose lip, the 3 lobes more or less triangular. Outside Costa Rica, only *Epidendrum foldatsii* Hágsater & Carnevali from Venezuela has the same architecture, and a bilobed lip, but the flowers are small, the lip being 4 x 7.5 mm.

CONSERVATION STATUS: DD. Data deficient.

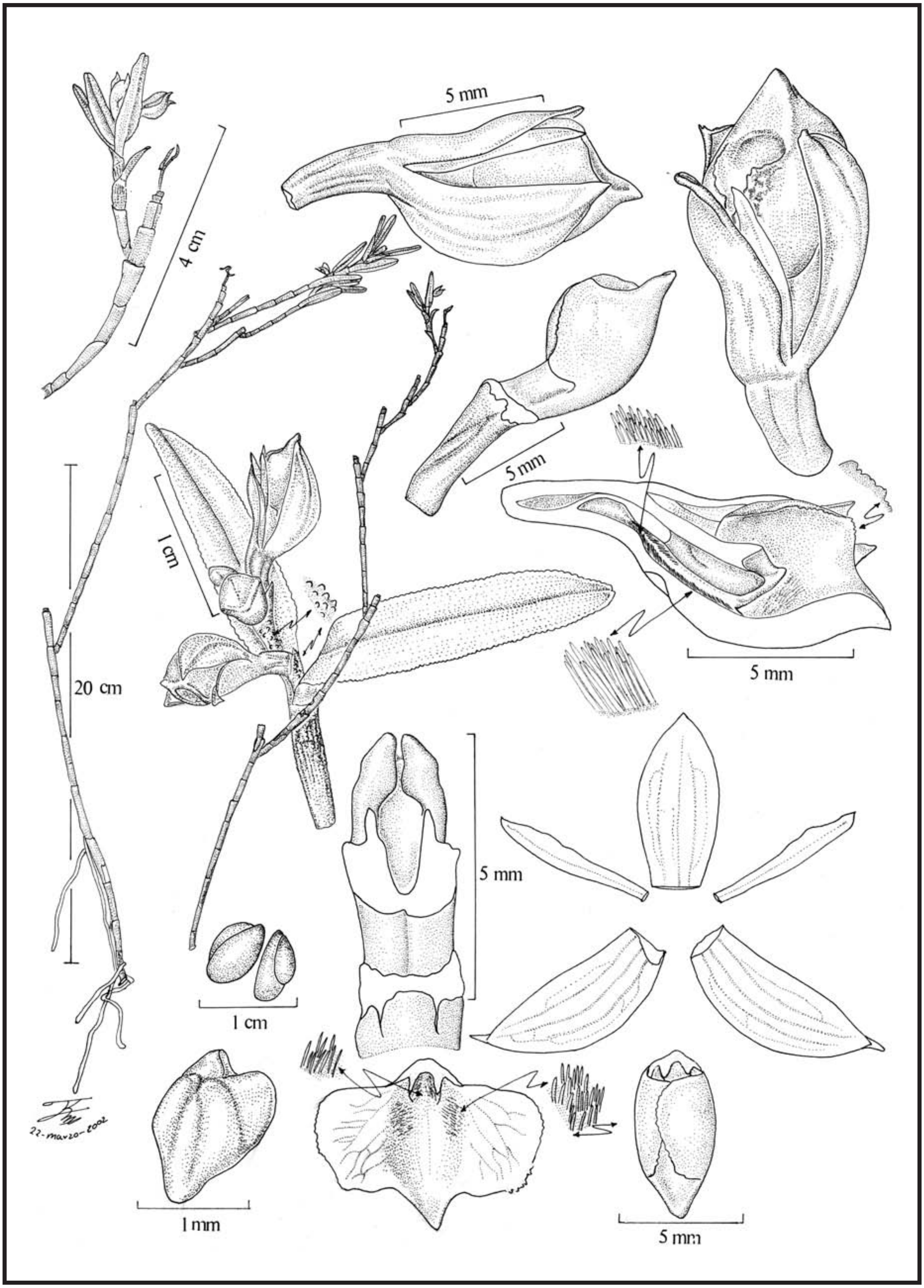
ETYMOLOGY: Dedicated to the late orchid researcher from Mexico, Miguel Angel Soto Arenas, (1963-2009) who shared his knowledge and experience with many orchid enthusiasts. Apart from his many contributions to science, reading through the narrative of the different ecosystems in The Orchids of Mexico, gives us a glimpse of how well he came to understand the relationship between orchids and their various habitats, as well as the threats to biodiversity. Having dedicated many years to the study of *Vanilla*, most of his work remains unpublished.



***NOTE:** The illustration and original description of *E. brenesii* represent a mixed collection, the floral segments belong to this entity, but the image of the entire flower to *E. brenesii*; the illustration of the plant habit is indistinguishable. The senior author expresses regret at having misidentified the material on which Barringer and Christenson proposed a new species in manuscript submitted in 1983.

REFERENCES: Barringer, K. A., and E. A. Christenson, 1983, A new species of *Epidendrum* (Orchidaceae) from Costa Rica, unpublished manuscript, Herbario AMO. Hágsater, E., M. A. Soto Arenas, G. Salazar, R. Jiménez Machorro, M. A. López Rosas y R. L. Dressler, 2005, **The Orchids of Mexico.** Instituto Chinoín, Mexico City, 304 pp. Karremans, A. P., & E. Hágsater, 2010, Confusion in *Epidendrum brenesii* Schltr., and a new Costa Rican species: *Epidendrum sotoanum* (Orchidaceae), **Lankesteriana** 9 (3): 403-409. Santiago; E., & E. Hágsater, 2006, *Epidendrum brenesii* in E. Hágsater & L. Sánchez (eds.), **Icon. Orchid. (Mexico)** 8: pl. 814. Barringer, K., 1986, Schlechter's Costa Rican Types, **Fieldiana: Bot.** 17: 6-7.

Authors: A. Karremans & E. Hágsater **Illustrator : R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM SPASMOSUM Hágsater & Dodson **Plate 1387**

EPIDENDRUM SPASMOSUM Hágsater & Dodson, Icon. Orchid. (Mexico) 7: pl. 789. 2004.

Type: ECUADOR: Morona-Santiago: road from Limón to Cuenca, 2000 m, 28 March 1985, ***Alex Hirtz, Carl & Jane Luer & W. Flores 2405.*** Holotype: MO! (Illustration voucher).

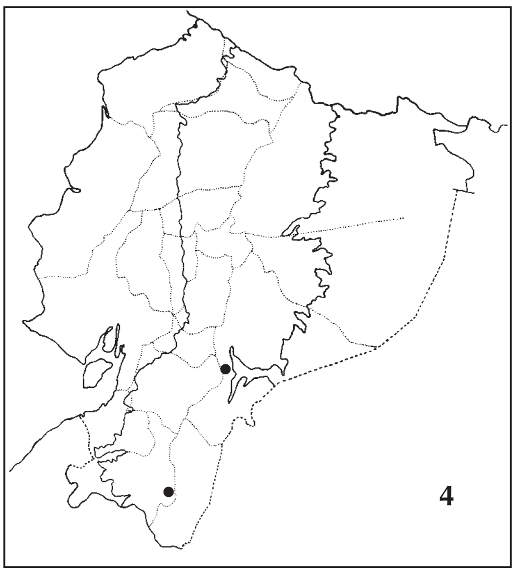
Hierba erecta, de crecimiento sucesivo lateral, escasamente ramificada, de 40-50 cm de alto. **Raíces** de los entrenudos basales del tallo basal, carnosas, delgadas, 0.5-0.7 mm de grosor. **Tallos** tipo caña, teretes, delgados, producidos del entrenudo apical del tallo anterior, progresivamente más cortos, 3-40 x 0.1-0.3 cm; la base con un par de brácteas tubulares, no foliares, 3-14 mm de largo. **Hojas** 5-7, distribuidas hacia la parte media apical de los tallos, alternas, articuladas; vaina tubular, finamente estriada, verrugosa, 0.7-1.1 x 0.1-0.3 cm; lámina subcoriácea, angostamente lanceolada oblonga, ápice desigualmente bilobado, margen crenulado, 1.4-2.8 x 0.26-0.53 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, subsésil, dística, suberecta, 10 mm de largo; pedúnculo corto, filiforme, 3-5 mm de largo, oculto entre las dos hojas apicales; raquis verrugoso. **Brácteas florales** más cortas que el ovario, abrazadoras, deltoides, agudas, margen entero, uninervadas, escasamente verrugosa en la superficie dorsal, 1.6-3 mm de largo. **Ovario** terete, grueso, liso, no inflado, 4 mm de largo. **Flores** 3-5, sucesivas, no resupinadas, blancas con ápices de sépalos rosados a purpureos; sin datos de fragancia. **Sépalos** entreabiertos, libres, elípticos, agudos, 3-nervados, las nervaduras laterales ramificadas, margen entero; el **dorsal** 7-7.8 x 2.6-3.3 mm; los **laterales** oblicuos, aristados, 8.8 x 3.1 mm. **Pétalos** contiguos al sépalo dorsal, libres, linear oblanceolados, subagudos, 1-nervados, margen ligeramente sinuoso hacia la zona media apical superior, 6-7.4 x 0.9-1.15 mm. **Labelo** unido a la columna, trilobado, truncado en la base, abrazando a la columna en posición natural, 5.7-6.5 x 8.3-10 mm; provisto de un par de quillas basales laminares, muy cortas, pubescente entre las quillas y a los lados del disco; lóbulos laterales subcuadrados, margen exterior eroso, 4-4.7 x 4-4.5 mm; lóbulo medio triangular, pequeño, margen entero, 1.5 x 2.3 mm. **Columna** delgada, ligeramente arqueada hacia arriba, bidentada en el ápice, 5 mm de largo. **Clinandrio** reducido, margen entero. **Antera** obovoidea, 4-locular. **Polinios** 4, ovoides, lateralmente comprimidos, los exteriores más pequeños. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** ausentes. **Nectario** penetrando hasta la mitad del ovario, angosto, pubescente frente a la cavidad estigmática, la ornamentación orientada hacia el fondo. **Cápsula** no vista.

Erect, somewhat branching **herb** with successive lateral growths. **Roots** from the basal internodes of the basal stem, fleshy, thin. **Stems** cane-like, terete, thin, produced from an apical internode of the previous stem, progressively shorter; the base covered by a pair of non-foliar tubular sheaths. **Leaves** 5-7, distributed throughout the apical half of the stem, alternate, articulate; sheath tubular, minutely striated and verrucose; blade sub-coriaceous, narrowly oblong-lanceolate, apex unequally bilobed, margin crenulate. **Inflorescence** apical, sub-sessile, flowering only once, racemose, distichous, sub-erect; peduncle short, filiform, hidden among the apical leaves; rachis verrucose. **Floral bracts** shorter to as long as the ovary, amplexicaul, deltoid, acute, margin entire, 1-veined, scarcely verrucose on the dorsal surface. **Ovary** terete, thick, smooth. **Flowers** 3-5, successive, non-resupinate, white with apex of sepals pink to purple. **Sepals** partly spreading, free, elliptic, acute, 3-veined, the lateral veins branched, margin entire; laterals oblique, aristate. **Petals** contiguous to the dorsal sepal, free, linear-oblanceolate, sub-acute, 1-veined, upper apical margin sinuous. **Lip** united to the column, 3-lobed, base truncate, embracing the column in natural position; provided with a pair of very short, basal laminar keels, pubescent between the keels and on the sides of the disc; base truncate; lateral lobes sub-quadrate, exterior margin erose, mid-lobe triangular, small, margin entire. **Column** slightly bent at the base with respect to the ovary, thin, arched upwards, apex bidentate. **Clinandrium-hood** reduced, margin entire. **Anther** obovoid, 4-celled. **Pollinia** 4, obovoid, laterally compressed, the outer ones smaller. **Rostellum** sub-apical, slit. **Nectary** penetrating half the ovary, narrow, pubescent in front of the stigmatic cavity, the ornamentation oriented towards the base.

OTHER SPECIMEN: ECUADOR: Loja: Altos de Numbala, 2800-2900 m, VI 1982, *D'Alessandro 185*, SEL! (pro parte, the specimen of the far left).

DISTRIBUTION AND ECOLOGY: Known only from southern Ecuador, from the upper Amazon slope of the Andes, at 2000-2900 m altitude. Flowering from March to June.

RECOGNITION: *Epidendrum spasmosum* belongs to the Elleanthoides Group, Rhombochilum Subgroup which is characterized by the thin, branching habit, narrow, short, sub-coriaceous leaves with a crenulate margin and unequally bilobed apex, racemose, sub-distichous, short, inflorescence, with successive flowers, the entire lip embracing the column. The species is recognized by the non-resupinate flowers, white with the apices of the sepals pink to purple, the flowers are tightly cramped, with the lip embracing the column to leave only a round aperture through which the column may be reached for pollination, with sub-quadrate, erose lateral lobes of the lip and a small triangular apical lobes; the petals are linear-oblanceolate, with the upper margin sinuous. It was originally lumped with what is today proposed as a new species, *E. oripicoranense* Hágsater & E.Santiago which is vegetatively very similar, but has simultaneous flowers, somewhat smaller, linear petals, the column strongly geniculate with respect to the ovary, and the margin of the lip entire. *Epidendrum golondrinense* Hágsater & Dodson has a similar habit, but somewhat different, more numerous (up to 13), smaller flowers (sepals 3.8 mm long), the lip 3-lobed, with the lateral lobes smaller than the mid-lobe. *Epidendrum rhombochilum* L.O.Williams is recognized by the triangular lip, two, lentil-shaped pollinia slit longitudinally down one side and lanceolate dorsal sepal. *Epidendrum chysanthum* Hágsater & Dodson has small, branching, caespitose plants with small, fleshy, bronzy yellow-green colored flowers produced simultaneously, the rhomboid lip enveloping the column, the sepals 6-8.5 mm long; it also has 2 pollinia, an infrequent character in the genus. *Epidendrum rhodanthum* which is sympatric with *E. chrysanthum*, has successive old-pink flowers, the lip transversely elliptic, apiculate, the sepals 8.5 mm long, and 4 pollinia. It is superficially similar to *E. guacamayense* Hágsater & Dodson that has quite similar flowers, but distinctly different, long, grassy leaves and the branching inflorescence with a long, hair-thin peduncle to each branch.



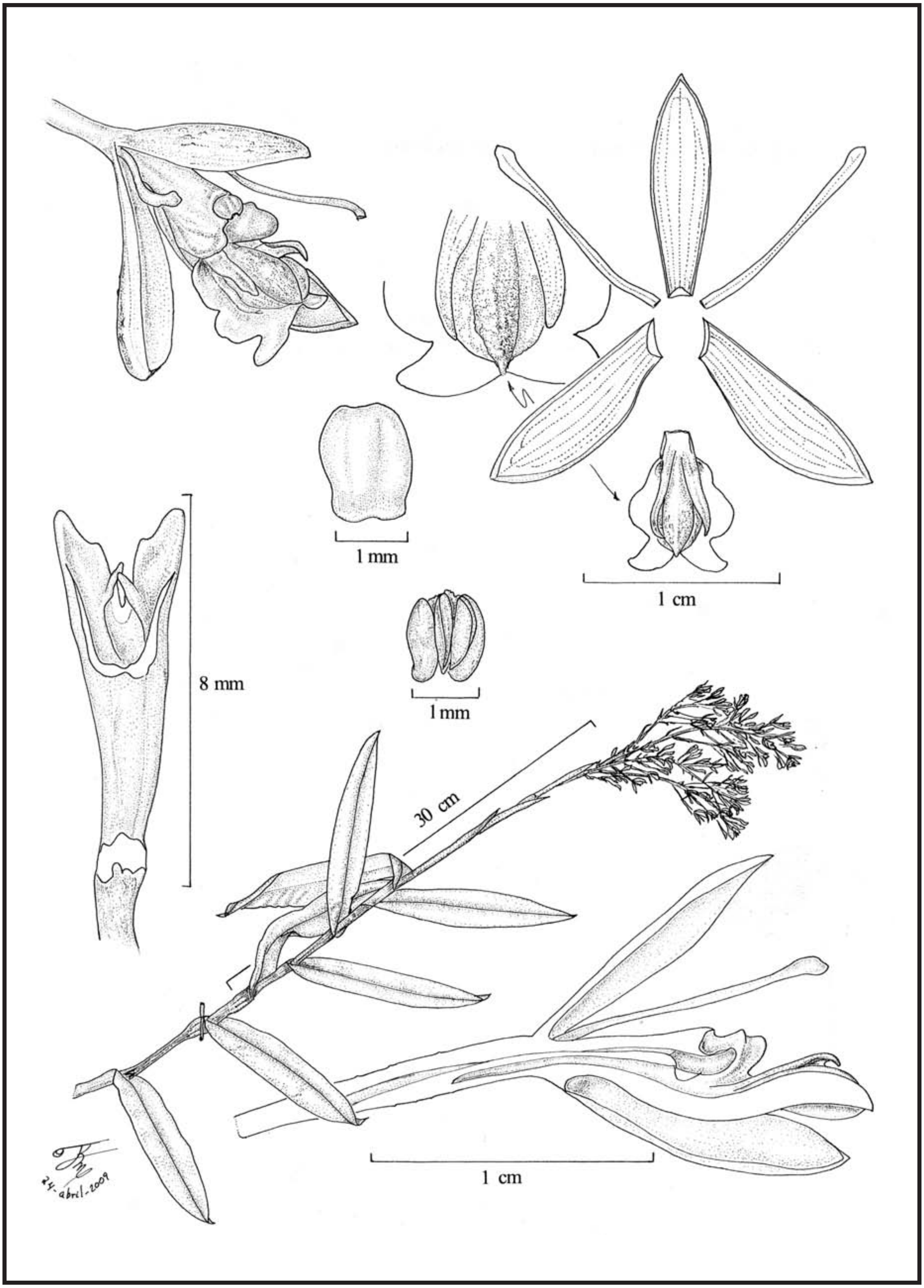
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NOTE: The original description provided for *E. spasmosum* was a combined description of that species and what is now described as *E. oripicoranense*, therefore the description here provided corrects that mistake. The specimen citation has also been corrected.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek σπασμος, a cramp, spasm, in reference to the cramped appearance of the flower, with the lip tightly embracing the column and the sepals and petals barely open.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM SPATHATUM Schltr. **Plate 1388**

EPIDENDRUM SPATHATUM Schltr., Repert. Spec. Nov. Regni Veg. 15: 55. 1917.

Type: ECUADOR: [Pichincha:] In silvis prope Niebly ad praed. Boloña, Januar 1883, ***A. Sodiro 62***. Published sketch of flower, AMES 42607! Holotype: B, destroyed. Lectotype designated by Dodson, 1999: Prov. Riob. Pangor, 1886, *Sodiro 169/62,* QPLS!, here rejected.* Lectotype, here designated, ***Sodiro* 62,** the sheet with a single mounted specimen: BR! Isolectotype, the sheet with 3 plants mounted, the stem with the inflorescence on the right hand side: BR!

Synonym: *Epidendrum embreei* Dodson, Icon. Pl. Trop. ser. 1, 4: pl. 426. 1982. Type: ECUADOR: Pichincha: Guayumo, Quito to Nanegal, 2000 m, 26 October 1961, ***Calaway H. Dodson, Leonard B. Thien & Alvin Embree 1090.*** Holotype: SEL! Isotype: QCA!

Hierba terrestre o litófita, cespitosa, 70-100 cm de alto. **Raíces** basales, carnosas, gruesas, 1.5-3 mm de grosor. **Tallos** sencillos, lateralmente aplanados, decumbentes, 70-100 x 0.5-1 cm. **Hojas** 9-27, distribuidas a lo largo del tallo, articuladas, dísticas; vaina tubular, finamente estriada, 1.2-4.5 x 0.5-1 cm; lámina elíptica, cortamente acuminada, margen entero, extendido, 3-14.5 x 1.5-5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, paniculada, florece una sola vez, 10-31 cm de largo; pedúnculo lateralmente aplanado, 7-12 cm de largo; provisto de 2 a 4 brácteas tubulares, conduplicadas, ancipitosas, acuminadas, 5-9.5 cm de largo; raquis terete, con 5-6 racimos subparalelos al raquis, paucifloros, cada uno de ellos con una bráctea basal angostamente triangular, acuminada, 1.7-5 cm de largo. **Brácteas florales** más cortas que el ovario, triangular lanceoladas, largamente acuminadas, 6-11 mm de largo. **Ovario** terete, delgado, no inflado, escasamente verrugoso, 25-30 mm de largo. **Flores** 50-140, simultáneas, resupinadas, de color anaranjado con el labelo y la columna blanco cremoso; sin fragancia. **Sépalos** entreabiertos, libres, oblanceolados, obtusos, dorsalmente pustulados, ligeramente cóncavos, margen entero, extendido, muy carnoso, 10-12 x 2-4 mm; los **laterales** ligeramente oblicuos. **Pétalos** entreabiertos, libres, linear filiformes, algo más anchos en el ápice, redondeados, margen entero, 10-11 x 1 mm. **Labelo** unido a la columna, trilobado, ligeramente cuneado en la base, margen entero, 4-5.5 x 4-6 mm; bicalloso, los callos muy prominentes, carnosos, delgados, subcorniformes, alargados hasta la base del lóbulo medio; disco provisto de 3 quillas intercallosas, la central alargada hasta el seno apical; lóbulos laterales hemi-pandurados a semiorbiculares, incipientemente bilobados, en ocasiones con el margen basal plegado, redondeados en el ápice, 2.5 x 3.5 mm; lóbulo medio bífido, emarginado, los lóbulos divaricados, triangulares, el ápice obtuso a redondeado, 2 x 5.5 mm. **Columna** recta, delgada en la base y dilatada en el ápice, ápice bialado, las alas bidentadas, prominentes, 7-9 cm de largo. **Clinandrio** reducido, margen entero. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando ½ del largo de la cavidad estigmática. **Antera** no vista. **Polinios** 4, tipo ala de pájaro, los interiores más pequeños. **Nectario** poco profundo sin penetrar el ovario. **Cápsula** no vista.

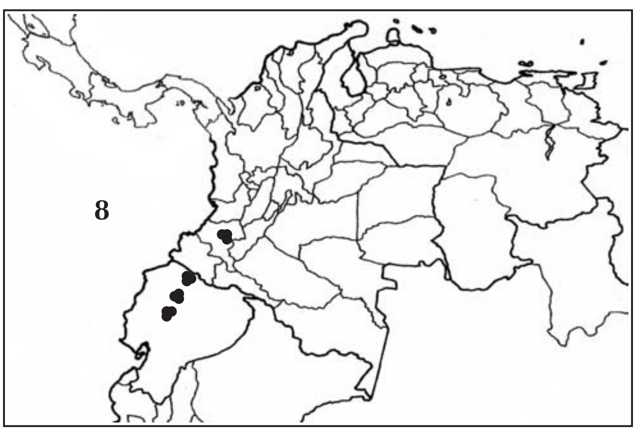
Terrestrial or lithophytic, caespitose **herb. Roots** basal, fleshy, thick. **Stems** simple, laterally compressed, decumbent. **Leaves** 9-27, distributed throughout the stem, articulate, distichous; sheaths tubular, minutely striated; blade elliptic, short acuminate, margin entire, spreading. **Inflorescence** apical, paniculate, flowering only once; peduncle laterally compressed, provided with 2-4 tubular, conduplicate, ancipitose, acuminate bracts; rachis terete, with 5-6 branches sub-parallel to the rachis, few-flowered, each with a narrowly triangular, acuminate bract at the base. **Floral bracts** shorter than the ovary, triangular-lanceolate, long-acuminate. **Ovary** terete, thin, not inflated, scarcely verrucose. **Flowers** 50-140, simultaneous, resupinate, orange-colored, the lip and column creamy white; without fragrance. **Sepals** partly spreading, free, oblanceolate, obtuse, dorsally pustulate, slightly concave, margin entire, spreading, very fleshy; the lateral sepals slightly oblique. **Petals** partly spreading, free, linear-filiform, somewhat wider at the apex, rounded, margin entire. **Lip** united to the column, 3-lobed, base slightly cuneate, margin entire; bicallose, the calli very prominent, fleshy, thin, somewhat horn-like, elongate, reaching the base of the mid-lobe; disc provided with 3 keels, the central keel reaching the apical sinus; lateral lobes hemi-pandurate to semi-orbicular, slightly bilobed, the basal margin sometimes folded; mid-lobe bifid, emarginate, the lobes divaricate, triangular, the apex obtuse to rounded. **Column** straight, thin at the base, dilated towards the apex, apex two-winged, the wings bi-dentate, prominent. **Clinandrium-hood** reduced, margin entire. **Rostellum** sub-apical, slit. **Pollinia** 4, bird-wing type, the inner pair smaller. **Nectary** shallow, without penetrating the ovary.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Ranging from southern Colombia (Cauca) to central Ecuador, along the western slope of the Andes, at 1500-2800 m altitude, on rocks and road banks. Flowering in October to May.

RECOGNITION: *Epidendrum spathatum* belongs to Pseudepidendrum Group, Porphyreum Subgroup which is characterized by the caespitose habit, unbranched stems, apical, branched inflorescence, no true spathaceous bract, and the flowers with long, thin column, a 3-lobed lip with the mi-lobe generally bifid and divaricate, and filiform petals. The species is distinguished by the orange flowers with a yellow-orange lip, the segments cucullate, the calli are long, and acute, the disc of the lip with 3 pad-like keels reaching the apex of the lip. There is a close resemblance to *E. porphyreum* but that species has larger flowers that are purple with a white splash in the lip. The two species are sympatric throughout most of their range. The natural hybrid is described in this same volume as *Epidendrum x spathiporphyreum* Hágsater & Dodson and is distinguished by the red colored flowers, the column and lip reddish pink, sepals dorsally verrucose, the lateral lobes of the lip dolabriform, the mid-lobe bifid, the lobes divaricate, acute, and the calli prominent, horn-like, calli and disc white turning yellow with age. *Epidendrum sneidernii* Hágsater & E. Santiago has very prominent somewhat horn-like calli, but the flowers are larger, sepals 14-15 mm long, dorsally smooth and the lip is cordate at the base; the ovary is inflated.

***NOTE:** As customary at the time, Sodiro used a species number for his collections which looked like the same species, not for each collecting event; thus some numbers include several different species, because similar species were confused. The specimen from QPLS used by Dodson to lectotypify *E. spathatum* is *Sodiro 169/62*, Sodiro added with a different ink "/62", and was collected in "Prov. Riob. Pangor" in 1886, being originally identified as *Epidendrum porphyreum* Lindl. and later corrected by Sodiro himself to *Epidendrum spathatum* Schltr. Dodson lectotypified the species on the basis of number "62", before he understood that it was a mixed collection. A detailed analysis and illustration (AMO) of this collection (*Sodiro 169/62*, QPLS) has allowed us to confirm that the specimen corresponds to *E. porphyreum* and thus is not in accordance with the protologue nor the illustration of the type. Other specimens "*Sodiro 62*" deposited at BR, and the illustration of a flower from the holotype published in Repert. Spec. Nov. Regni Veg., Beih. 58, t. 46, nr. 182. 1930. show that *E. spathatum* corresponds to an extreme variation of the species published by Dodson as *E. embreei* in 1982. There are 8 more unlabeled specimens of *Sodiro* at QPLS which correspond to *E. spathatum*, and which we have included under "Other Specimens".

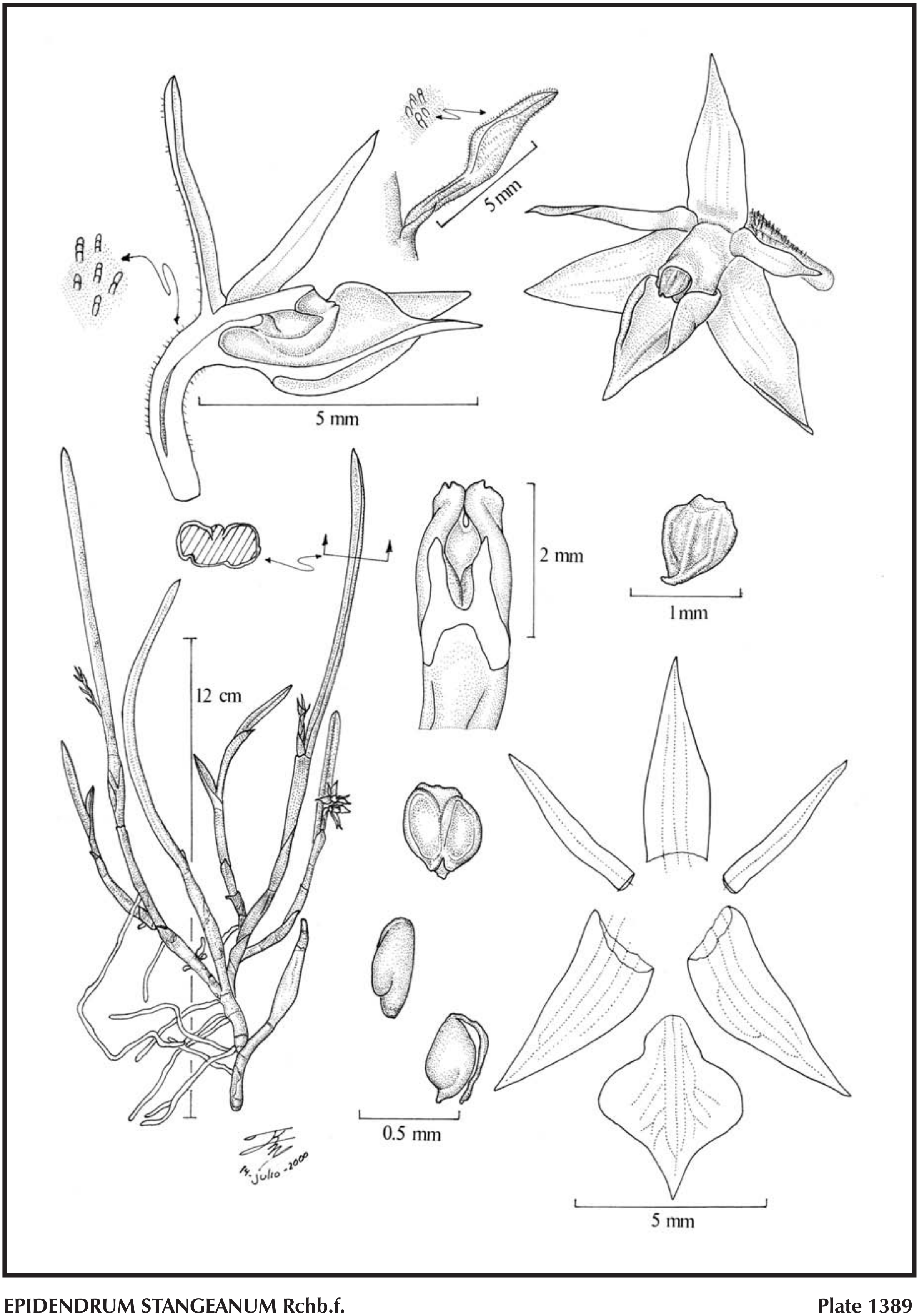


CONSERVATION STATUS: NT. Not threatened, widespread and locally common in Ecuador.

ETYMOLOGY: From the Greek σπαθη, a broad flat blade, in modern botany a spathe, in reference to the bracts that subtend the inflorescence, not true spathes.

REFERENCE: Dodson, C. H., 1999, Orchidaceae in P.Jørgensen & C.Leon, (eds.) **Catalogue of the Vascular Plants of Ecuador**, Monogr. Syst. Bot. Missouri Bot. Gard. 75: 667.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM STANGEANUM Rchb.f. **Plate 1389**

EPIDENDRUM STANGEANUM Rchb.f., Gard. Chron. n.s., 15: 462. 1881.

Type: PANAMA: hort. Hamburg Bot. Gard., ***F. F. Stange 602.*** Holotype: W-R 51084! tracing AMES 25258!

Synonyms: *Epidanthus stangeanum* (Rchb.f.) Brieger, *nom. Illeg.,* Orchideen (Schlechter) ed. 3. 1: 511. 1976.

Epidendrum glandulosum Ames, Sched. Orch. 7: 5. 1924. Type: PANAMA: Cativa trail from Colón, sea level, September 1923, ***C. W. Powell 338.*** Holotype: AMES 27041! Isotypes: AMES 30304! AMES 30305! MO!

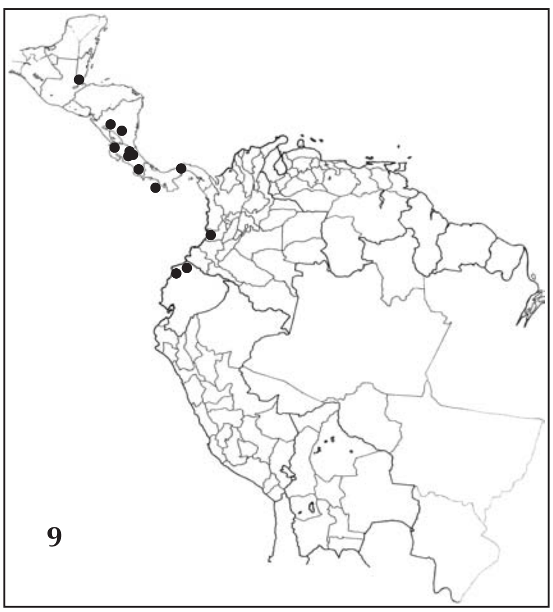
Hierba epífita, simpodial, rizomatosa, repente, erecta, 6-20 cm de alto. **Raíces** a lo largo de los nudos del rizoma, escasas, carnosas, delgadas, 0.2-1 mm de grosor. **Tallos** engrosados, formando seudobulbos fusiformes, teretes, angostos, erectos, 2.5-5 x 0.11-0.4 cm; separados entre sí por un rizoma delgado, alargado, de 1.5-3 cm de largo, los seudobulbos envueltos cuando jóvenes en 3-4 vainas no foliáceas, tubulares, estriadas, algo imbricadas y fibrosas con el tiempo, 4-13 x 1.2-3.5 mm. **Hojas** 1 (o raramente 2), distribuidas en el ápice de cada seudobulbo, desiguales en tamaño, erectas, articuladas, persistentes; vaina tubular finamente estriada, 8-20 mm de largo; lámina linear, subaguda a redondeada, diminutamente apiculada, semiterete, carnosa, sulcada, con una quilla ventral a todo lo largo, verde, margen entero, 1-11.5 x 0.15-0.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, del tallo maduro, mucho más corta que la hoja apical, racemosa, helicoidal, erecta, pauciflora, laxa, 2.5-5 cm de largo; pedúnculo corto, terete, delgado, 10 mm de largo; ocasionalmente provisto en la base de una bráctea triangular, aguda, abrazadora, 5-6 mm de largo. **Brácteas florales** de la mitad a casi tan largas como el ovario, triangulares, acuminadas, abrazadoras, 2.3-5 mm de largo. **Flores** 9-13, sucesivas, no resupinadas, de color verdoso a verde olivo, ocasionalmente con los segmentos más o menos teñidos de rojizo por fuera y con el ápice de la columna blancuzco; sin datos de fragancia. **Ovario** terete, delgado, no inflado, pubescente, con pelos bi a triseptados, 4-5 mm de largo. **Sépalos** extendidos, algo carnosos, triangular lanceolados, acuminados, 3-nervados, las nervaduras laterales ocasionalmente ramificadas dando la apariencia de ser 5-nervados, ligeramente pubescentes en la superficie dorsal, margen extendido y entero, 4.6-6 x 1.2-2 mm; el **dorsal** libre; los **laterales** fusionados de manera oblicua a la mitad basal de la columna, falcados. **Pétalos** extendidos, libres, lineares, acuminados, 1-nervados, margen extendido y entero, 4-4.5 x 0.4-0.6 mm. **Labelo** unido a la columna, entero, base truncada, transversalmente elíptico en la mitad basal y triangular acuminado en la mitad apical, ecalloso, sólo con un par de cuniculos muy pequeños en la base de la lámina, margen entero, 3-3.8 x 3-3.8 mm. **Columna** recta, gruesa, 2.3-2.6 mm de largo; terminada a cada lado en un diente pequeño, triangular, agudo. **Clinandrio** reducido, margen entero. **Antera** ovoide, 2-locular. **Polinios** 2, ovoides, lateralmente comprimidos, apicalmente sulcados, producidos de la fusión parcial de dos pares desiguales; caudículas suaves y granulosas, tan largas como los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** obsoletos. **Nectario** corto, sin penetrar detrás del perianto, amplio y redondeado en la base, no ornamentado. **Cápsula** angostamente elíptica a fusiforme, con el perianto persistente, pedicelo, 2.4-2.7 mm de largo; cuerpo 11-14 x 3.7-5.4 mm, sin cuello apical.

Epiphytic, sympodial, rhizomatous, repent, erect, **herb. Roots** from the nodes of the rhizome, scarce, fleshy, thin. **Stems** thickened, forming fusiform, terete, thin, erect pseudobulbs, separated by a thin, long rhizome, the pseudobulbs covered when young by 3-4 non-foliaceous, tubular, striated, somewhat imbricating sheaths, becoming fibrous with time. **Leaves** 1 (or rarely 2), agregate at the apex of the seudobulb, unequal in size, erect, articulate, persistent; tubular sheath minutely striated; blade linear, sub-acute to rounded, minutely apiculate, semi-terete, fleshy, sulcate, with a ventral keel along the whole length, green, margin entire. **Inflorescence** apical, from the mature stem, much shorter than the apical leaf, racemose helicoid, lax, few-flowered; peduncle short, terete, thin; occasionally provided at the base with a triangular, acute, bract. **Floral bracts** half as long as the ovary, triangular, acuminate. **Flowers** 9-13, successive, non-resupinate, greenish to olive-green, the segments occasionally more or less dorsally tinged with reddish, apex of the column whitish. **Ovary** terete, thin, not inlfated, pubescent the hairs bi-, triseptate. **Sepals** spreading, somewhat fleshy, triangular-lanceolate, acuminate, 3-veined, the lateral veins occasionaly branching so as to appear 5-veined, dorsally slightly pubescent, margin entire, spreading.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Guatemala, Nicaragua, Costa Rica, Panama, Colombia and Ecuador. From sea level in mangroves (in Ecuador) to 700 m altitude, in lowland moist forests. Flowering July to December, in fruit from January to April.

RECOGNITION: *Epidendrum stangeanum* belongs to the Lanium Group which is characterized by the rhizomatose plants, the stems cane-like to pseudobulbous, leaves generally aggregate towards the apex, flowers non-resupinate, more or less pubescent, pollinia 2 or 4. The species is recognized by the somewhat repent plants with one or two apical, semi-terete, fleshy leaves on a thin fusiform pseudobulb, the racemose inflorescence shorter than the long leaf, flower small, star-shaped, segments acuminate, ovary and dorsal surface of the sepals mostly pubescent, lip with the basal half transversely elliptic, the apical half triangular, acuminate. It is closely related to *E. avicula* (Benth.) Lindley which is floraly very similar, but has wide, laminar leaves, and *E. stiliferum* Dressler, which has thicker pseudobulbs, a paniculate, pubescent infloresence about as long as the leaves, sepals 3 mm long.



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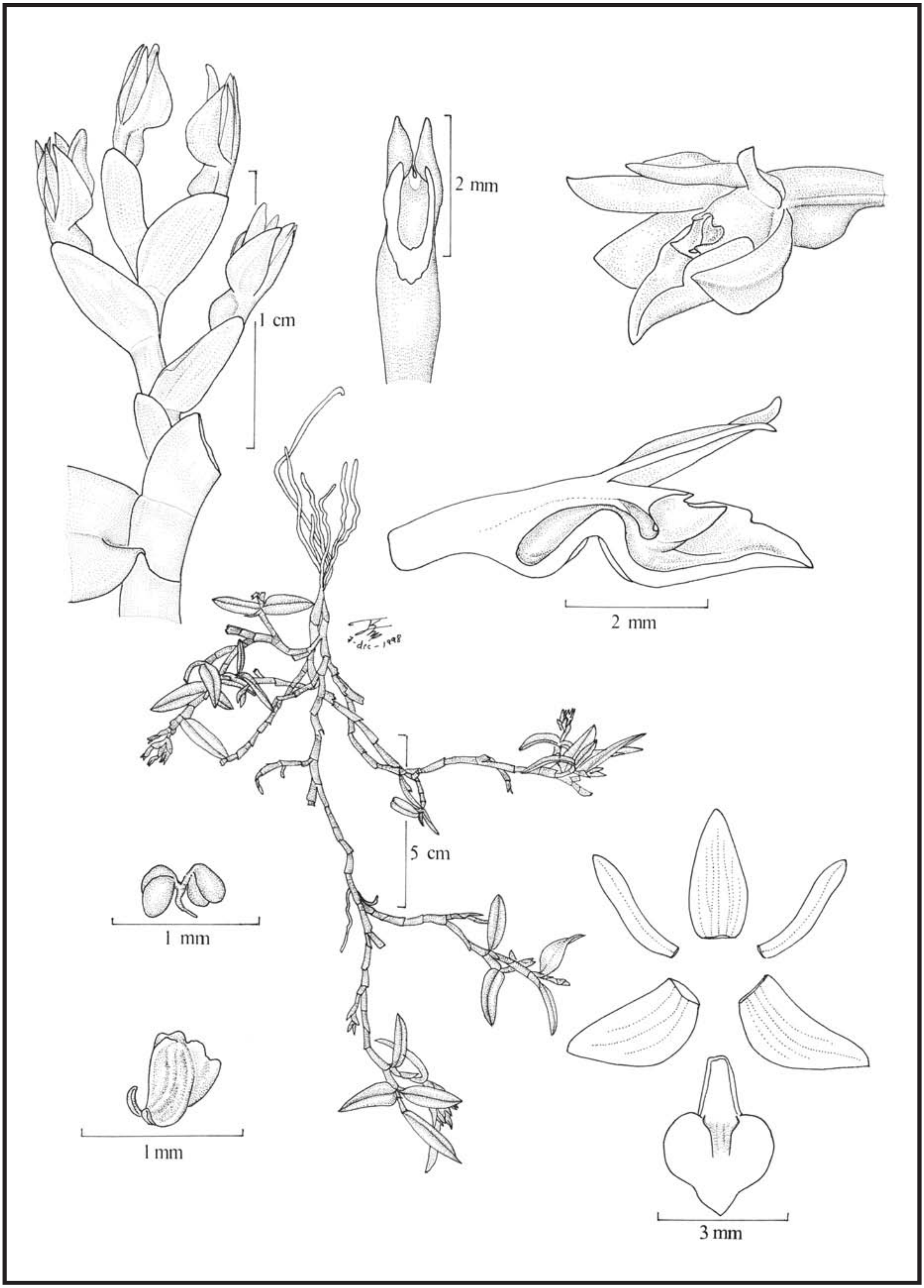
CONSERVATION STATUS: Data deficient. Rarely seen in cultivation.

NOTES: Dressler (1967) already noted the similarity of this species with *Lanium*, and the partially united pollinia. The notes and illustration from Ecuador by Dodson indicate a somewhat more cordate and wider lip, and 4 pollinia, but they are partly fused at the base. Thus the degree of fusion varies throughout the range. Other species in the *Lanium* group have 4 unequal pollinia. The record Guatemala adds another species to its flora and extends the known range northwards.

ETYMOLOGY: In honor F. F. Stange, orchid grower of Consul Schiller in Hamburg, Germany in the late 19th century.

REFERENCES: Atwood, J., 1987, **Selbyana** 10(1): 89, fig. 33, p. 125. Barringer, K., 1991, A revision of *Epidendrum* subgenus *Epidanthus* (Orchidaceae), **Britonia 43(4)**: 240-241. Dodson, C.H., 1984, **Icon. Pl. Trop.** 10: pl. 922. Dressler, R. L., 1967, **Brittonia 19(3)**: 237-243. Hágsater, E., J. García-Cruz & L. Sánchez Saldaña, 2003, *Epidendrum* in Hammer, F., et al., **Manual de Plantas de Costa Rica,** 3: 164. Hamer, F., 1982, Icon. Pl. Trop. 8: pl. 739. Hágsater, E., 2005, *Epidendrum* in F. Pupulin, **Vanishing Beauty: Native Costa Rican Orchids 1**: 286, San José C.R. Editorial de la Universidad de Costa Rica. Williams, L.O., 1946. **Orchidaceae** in **Flora of Panama**, Ann. Missouri Bot. Gard. 33: 336.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM STROBILIFERUM Rchb.f. **Plate 1390**

EPIDENDRUM STROBILIFERUM Rchb.f., Nederl. Kruidk. Arch. 4: 333.1858.

Type: SURINAM: without locality, ***Splitgerber 426***. Holotype: not found.

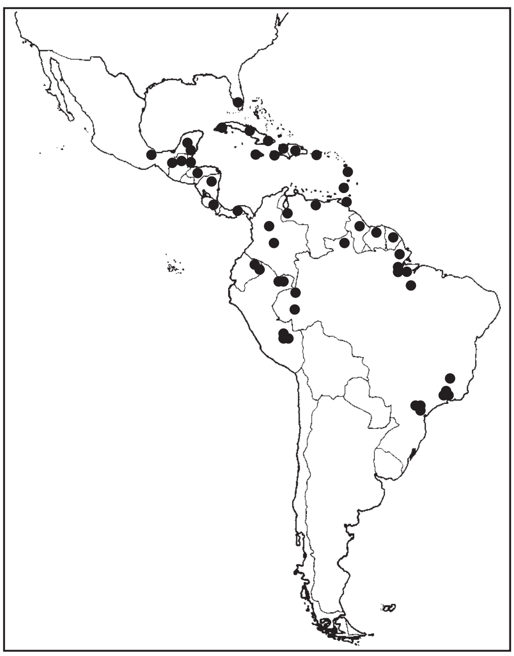
Synonyms: *Spathiger strobiliferus* (Rchb.f.) Small, Man. s.e. Fl. 390. 1933. *Isochilus ramosus* Focke, Tijdschr. Wis-Natuurk. Wetensch. 4: 69. 1851. Type: SURINAM, ***Focke s.n.*** Holotype unknown. *Epidendrum rodriguesii* Cogn., Fl. Bras. 3, pt. 5: 176. 1898. based on *Epidendrum mosenii* Barb.Rodr., Gen. & Sp. Orch. Nov. 2: 144. 1881. Type: BRAZIL: Sao Paulo, Santos, ***Regnell [Mosén] 3487.*** Lectotype, here designated: S! (Illustration, AMO); [Non *Epidendrum mosenii* Rchb. f., 1880. = *E. fulgens* Brogn.] *Epidendrum verecundum* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 17: 42. 1922. Type: PANAMA: ***C. W. Powell 209.*** Holotype: B (destroyed); lectotype (designated by Christenson, 1991): AMES 23817! Isolectotype: MO 956026! Clonotypes: AMES 27283! AMES 27640!).

Hierba epífita, rastrera a péndula, ramificada, de 12-30 cm de largo. **Raíces** basales, delgadas, flexuosas, hasta 1 mm de grosor. **Tallos** nuevos producidos de los entrenudos intermedios del tallo anterior, teretes en la base, aplanados hacia el ápice, fractiflexos, las ramas de tamaño variable, 7-18 x 0.1-0.2 cm. **Hojas** 2-10, extendidas, distribuidas a lo largo de los tallos, articuladas, caedizas; vaina tubular, rugosa, 0.4-1.7 x 0.2-0.3 cm; lámina angostamente elíptico lanceolada, ápice desigualmente bilobado, mucronada, coriácea, 1.2-3.5 x 0.3-0.4 cm. **Bráctea espátacea** ausente. **Inflorescencia** apical, racemosa, dística, 1-2.5 cm de largo. **Brácteas florales** casi del mismo tamaño que el ovario, algo imbricadas, oblongo ovadas, obtusas, margen hialino, escariosas, 4.5-5.5 mm de largo. **Flores** 3-5, entreabiertas, verde pálido a blanco cremoso, sin fragancia aparente. **Ovario** inflado en la mitad apical, formando una vesícula, sulcado, 4.5-6 mm de largo. **Sépalos** entreabiertos, lanceolados, agudos, 5-nervados, con nervaduras secundarias, margen entero, revoluto, 3.5-4.3 x 0.7-1.2 mm, los laterales oblicuos, 3-5 nervados. **Pétalos** lineares, ligeramente oblicuos, obtusos, 1-3 nervados, margen entero, extendido, 3.8-4.3 x 0.5-0.7 mm. **Labelo** entero, triangular cordiforme, agudo, truncado en la base, 2.7-3.5 x 2-2.5 mm; callo en forma de "Y". **Columna** recta, corta, ensanchada hacia el ápice y terminada a cada lado en un proceso agudo, ca. 1.5 mm de largo. **Clinandrio** corto, entero, formando un diente agudo a cada lado. **Antera** obovada, 4-locular, el ápice prolongado en 2 cuernos. **Polinios** 4, obovoides, subiguales, aplanados lateralmente; caudículas suaves y granulosas, casi del mismo tamaño que los polinios. **Rostelo** subapical, hendido. **Nectario** de 1/3 del largo del ovario, inflado, no ornamentado. **Lóbulos laterales del estigma** cortos, penetrando 1/4 de la cavidad estigmática. **Cápsula** subglobosa, cuerpo, 5.8-7.5 x 3-6 mm, rostro 1.7-2.0 x 0.8-1.0 mm.

Epiphytic, branching, creeping to pendent **herb**. **Stems** produced from the middle internodes of the previous stem, terete at the base, laterally compressed toward the apex, fractiflex. **Leaves** 2-10, spreading, narrowly elliptic-lanceolate, unequally bilobed, mucronate, coriaceous. **Inflorescence** apical, racemose, distichous. **Floral bracts** about as long as the ovary, oblong-ovate, obtuse. **Flowers** 3-5, pale green to white-cream. **Ovary** inflated ventrally towards the apex, sulcate, terete. **Sepals** partly spreading, lanceolate, acute, 5-veined, with secondary veins, the laterals oblique, 3-5 veined. **Petals** linear, obtuse, oblique, 1-3 veined. **Lip** entire, triangular cordiform, the base truncate, entire, acute. **Column** straight, terminated in a pair of acute triangular processes. **Clinandrium-hood** reduced, entire, forming an acute tooth on each side. **Anther** obovate, 4-locular, ending in two horns. **Pollinia** 4, obovoid, sub-equal, laterally compressed; caudicles soft and granular as long as the pollinia. **Rostellum** sub-apical, slit. **Nectary** penetrating 1/3 of the ovary, inflated, smooth. **Lateral lobes of the stigma** 1/4 the length of the stigmatic cavity. **Capsule** sub-globose.

OTHER SPECIMENS: See appendix.

DISTRIBUTION AND ECOLOGY: Widespread throughout the neotropics, United States (Florida), eastern Mexico, Central America, West Indies and South America down to Peru and Brazil. Epiphyte, from 0 to 1400 m altitude. Flowering from February to May.



RECOGNITION: *Epidendrum strobiliferum* belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the Flexicaule Subgroup which has a straggling plant habit, where the main stem is not very evident, and the sepals have a dorsal keel which is generally prominent. The species is recognized by the small branching plants which may form large mats, with a distichous inflorescence, 3-5, small pale green to white-cream flowers (sepals 3.5-4.6 mm long), the ovary ventrally inflated, linear petals and a triangular-cordiform lip. Vegetatively it is similar to *Epidendrum repens* Cogn. and *Epidendrum brachyrepens* Hágsater, but those species belong to the Repens Subgroup which has strictly pendent plants, and small leaves, less than 2.5 cm long, are 1-flowered, the green flower is larger (sepals 6-8 mm long), the ovary is not inflated and the lip is ecallose. *Epidendrum swartzii* Hágsater endemic to Jamaica, has tree-like plants, 8-10 cm tall, produced on a single stem which is branched above, sepals 7-9-nerved, lip triangular sagitate, acuminate, acute, with several prominent veins, column winged, the wings triangular, acute.

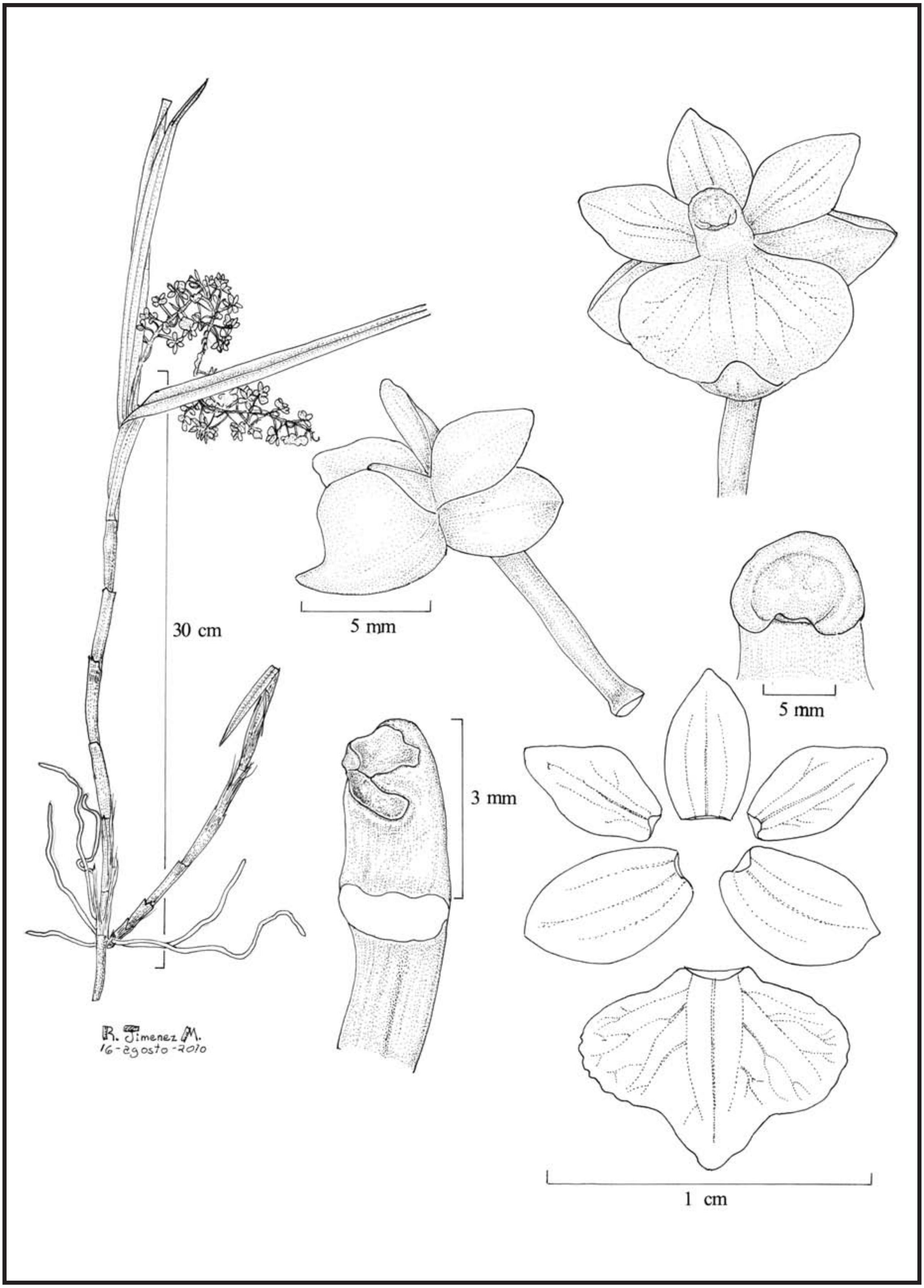
ETYMOLOGY: From the Greek στροβιλος, formed by overlapping scales like a pine-cone, in reference to the shape of the fruits (capsules) which are often present, and are half-covered by a scale-like bract.

CONSERVATION STATUS: DD. Data deficient.

REFERENCE: Christenson, E. A., 1991. Mesoamerican orchid studies II: Powell's Panamanian Orchidaceae. **Lindleyana** 6(3): 124-132.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: R. Jiménez M** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM SUBLIBERHOMBICUM Hágsater & E.Santiago **Plate 1391**

EPIDENDRUM SUBLIBERHOMBICUM Hágsater *et* E.Santiago, *sp. nov.*

Type: PERU: Pasco: Distrito Huancabamba: Localidad de Lanturachi, sector Santa Barbara, 3414 m, 10 October 2003, ***J. Perea, R.Francis, C.Mateo & G. Ortiz 626***. Holotype: MO! (Illustration voucher).

A *Epidendro sublibero* C.Schweinf. inflorescentiis longioribus, petalis ovato-rhombicis marginibus integris, labello in base truncato, lobulis lateralibus semiellipticis et lobo intermedio late triangulari apice anguste rotundato differt.

Hierba epífita, monopodial, de crecimiento escandente vertical. **Raíces** producidas en la base de la planta y ocasionalmente de tallos subsecuentes, delgadas, blanquecinas, 1-2 mm de grosor. **Tallos** delgados, tipo caña en la mitad basal y ligeramente engrosados a partir de la mitad apical, sin llegar a fusiformes, 24 x 0.5 cm; cubiertos por 5 vainas tubulares, no foliares, fibrosas con el tiempo, 4 cm de largo. **Hojas** 3 [4], agregadas en el ápice del tallo, articuladas, coriáceas, linear lanceoladas, el ápice obtuso, diminutamente apiculado, 14-22 x 0.6-1.0 cm; vainas tubulares, 4 cm de largo; ocasionalmente una vaina del tallo produce una lámina foliácea reducida. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, arqueada, pluriflora, densa, 21 cm de largo; pedúnculo alargado, terete, delgado, 4.5 cm de largo; provisto de 4 brácteas pequeñas, linear lanceoladas, acuminadas, abrazadoras, semejantes a las florales, 6-8 mm de largo; raquis recto. **Brácteas florales** de más de la mitad del largo del ovario, linear lanceoladas, largamente acuminadas, abrazadoras, 6 mm de largo. **Ovario** terete, delgado, no inflado, no ornamentado, 10 mm de largo. **Flores** ca. de 100, simultáneas, resupinadas, de color marrón a rosadas; sin datos de fragancia. **Sépalos** extendidos a ligeramente reflexos, libres, elípticos, obtusos, diminutamente apiculados, 3-nervados, margen entero, extendido, 3.5-5.2 x 2-3.2 mm. **Pétalos** ligeramente reflexos, libres, ovado-rómbicos, obtusos, 3-nervados, margen entero, 3.5-4.7 x 2.4-2.5 mm. **Labelo** libre con respecto a la columna, trilobado, base cortamente unguiculada, truncada, margen ligeramente crenado, 6.2 x 8.2 mm; ecalloso; lóbulos laterales hemielípticos, 3.2 x 4 mm; lóbulo medio anchamente triangular, ápice angostamente redondeado, 2 x 3.2 mm. **Columna** corta, recta, 3 mm de largo. **Clinandrio** prominente, margen subentero. **Rostelo** apical, entero, perpendicular a la columna. **Antera**, **Polinios**, **Nectario** y **Cápsula** no vistos.

Epiphytic, monopodial **herb** with vertical, scandent growth. **Roots** produced from the base of the plant and occasionally from subsequent stems, thin. **Stems** thin, the basal half cane-like, the apical half somewhat thickened without becoming fusiform; covered by 5 tubular, non-foliar sheaths, becoming fibrous with time. **Leaves** 3[4], aggregate at the apex of the stem, articulate, coriaceous, linear-lanceolate, the apex obtuse, minutely apiculate; leaf sheaths tubular; occasionally the apical sheath of the stem produces a reduced foliaceous blade. **Inflorescence** apical, a long racemose, arching, densely many-flowered; peduncle elongate, terete, thin, provided with 4 small, linear-lanceolate, acuminate, amplexicaul bracts, similar to the floral bracts; rachis straight. **Floral bracts** more than half as long as the ovary, linear-lanceolate, long, acuminate, amplexicaul. **Ovary** terete, thin, not inflated, unornamented. **Flowers** ca. 100, simultaneous, resupinate, brown to pink colored. **Sepals** spreading to slightly reflexed, free, elliptic, obtuse, minutely apiculate, 3-veined, margin entire, spreading. **Petals** slightly reflexed, free, ovate-rhombic, obtuse, 3-veined, margin entire, about as wide as the sepals. **Lip** free from the column, 3-lobed, base short unguiculate, truncate, margin slightly crenate; ecallose, lateral lobes hemi-elliptic; mid-lobe widely triangular, apex narrowly rounded. **Column** short, straight, thick. **Clinandrium-hood** prominent, margin sub-entire. **Rostellum** apical, entire, perpendicular to the column.

OTHER SPECIMENS: PERU: San Martín: above Jucusbamba, 9 VIII 1965, *Hamilton 1254*, K-L! Ibid. 3600 m, 23 VIII 1965, *Hamilton 1279*, K-L!

OTHER RECORDS: PERU: Huancavelica: Tayacaja near Isqay Cruz, 3200 m, 25 VIII 1999, *León 3016*, illustration published as *Epidendrum subliberum* C.Schweinf. Icon. Orchid. Peruv. pl. 656. **Junín:** Without locality, *Morón s.n.*, digital image, AMO!

DISTRIBUTION AND ECOLOGY: Known only from northern Peru, on the upper Amazon slope of the Cordillera Oriental of the Andes, at 3400-3600 m altitude, in bosque pajonal bajo. Flowering from August to October.

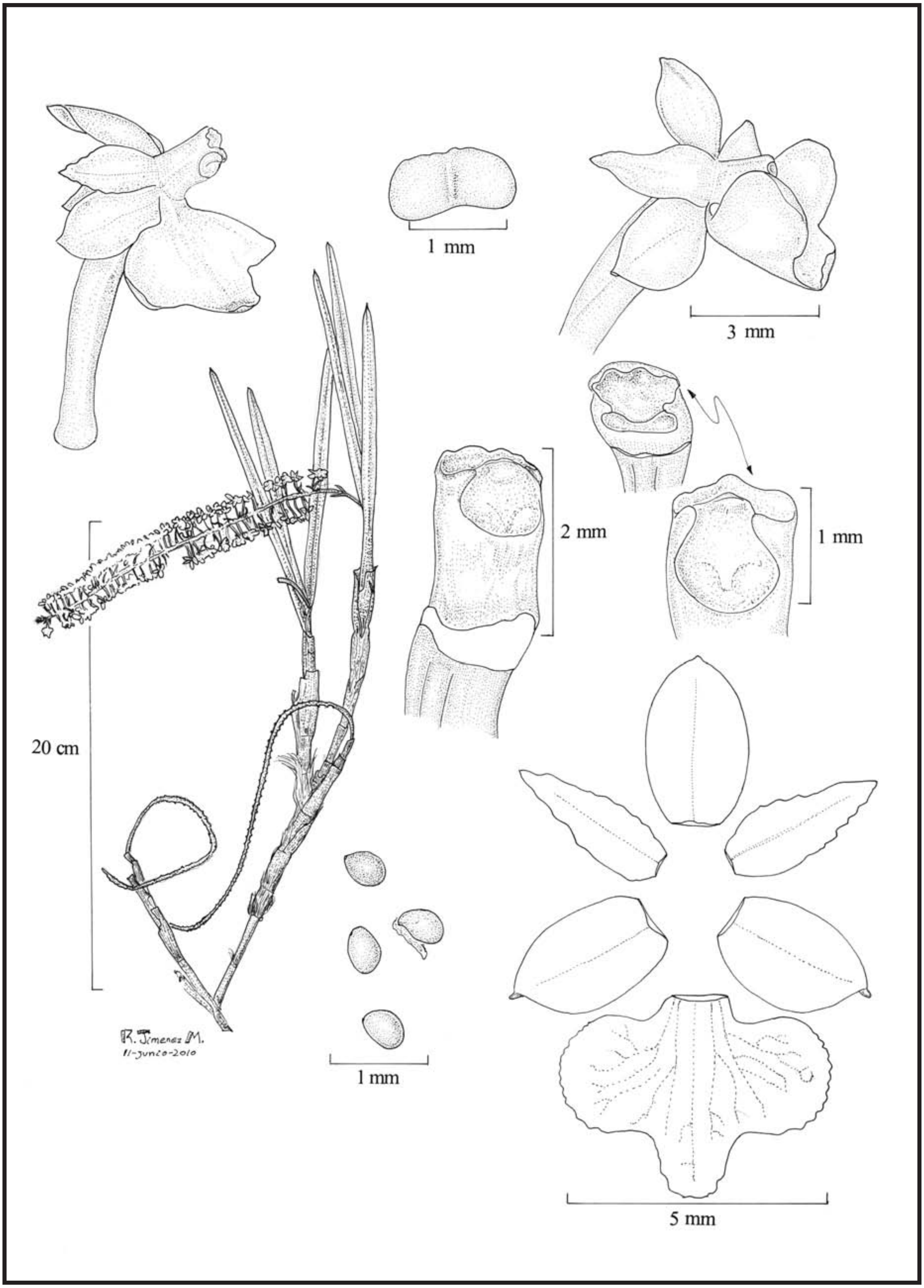
RECOGNITION: *Epidendrum subliberhombicum* belongs to the Albomarginatum Group which is characterized by the monopodial, vertical, scandent, zigzag habit, stems cane-like below, somewhat thickened along the apical middle-half or third to form a fusiform pseudobulb, the new stem originating just below the thickened part of the previous stem, apically bifoliate; leaves linear-lanceolate to linear-oblong. The species is recognized by the large leaves (14-22 x 0.6-1.0 cm), sepals 3.5-5.2 mm long, petals ovate-rhombic, the margin entire, 3.5-4.7 x 2.4-2.5 mm, 3-veined, the lip with the base truncate and the mid-lobe widely triangular. It is very similar to *Epidendrum subliberum* C.Schweinf. which has smaller flowers (sepals 3.2-3.8 mm long), petals lanceolate, narrow, with the margin dentate, 3.2-3.5 x 1.1-1.3 mm, 1-veined, and the lip with the base sub-cordate, and the mid-lobe rounded; the range of distribution overlaps. *Epidendrum albomarginatum* Rchb.f. has shorter, narrower leaves (3-9 x 0.15-0.4 cm), a sometimes paniculate inflorescence, sepals 6-8 mm long, petals oblanceolate, rachis fractiflex and the lip united throughout the length of the column. *Epidendrum francisci* Chocce, Hágsater & Acuña has a paniculate inflorescence, the rachis slightly fractiflex, successive flowers, sepals 8 mm long, and the lip entire and united throughout the length of the column.


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CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *sub*, in botanical composition, somewhat, *liber*, free, and *rhomibus*, diamond-shaped, in reference to the similarity to *Epidendrum subliberum*, sharing the lip free of the column, and distinguished by the diamond-shaped petals.

Authors: E. Hágsater & E. Santiago **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM SUBLIBERUM C.Schweinf. **Plate 1392**

EPIDENDRUM SUBLIBERUM C.Schweinf., Bot. Mus. Leafl. 15: 144. t. 44, 1952.

Type: PERU: Cusco: Prov. Paucartambo, Pillahuata, epiphyte in rain-forest, 3400 m, 11 December 1942, ***J. C. Vargas Calderón 3011.*** Holotype: AMES! Isotype: CUZ!

Synonym: *Scaphyglottis sublibera* (C.Schweinf.) Dressler, Taxon 13(7): 247. 1964. *Microepidendrum subliberum* (C.Schweinf.) Brieger, Die Orchideen, 3rd ed. 1(9): 556. 1977, nom. nudum.

Hierba epífita, monopodial, de crecimiento escandente vertical. **Raíces** producidas en la base del tallo inicial y raramente en la base de algunos de los tallos subsecuentes, delgadas, blanquecinas. **Tallos** delgados, tipo caña en la mitad basal y ligeramente engrosados a partir de la mitad apical sin llegar a fusiformes, cada tallo nuevo producido de un entrenudo debajo de la mitad apical del tallo anterior; la parte delgada 3-5 x 0.1-0.25 cm, la parte engrosada, 4.5-10 x 0.4-0.8 cm, cubiertos por 2-8 vainas tubulares, no foliares, fibrosas con el tiempo, 0.4-2.7 cm de largo. **Hojas** 2-3, apicales, articuladas, coriáceas; vainas tubulares, 9-22 mm de largo; lámina linear lanceolada, el ápice obtuso, diminutamente apiculado, 7.5-10 x 0.3-0.6 cm;. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, arqueada, pluriflora, densa, 8.5-15 cm de largo; pedúnculo corto, terete, delgado, 15 mm de largo; provisto de 3 brácteas pequeñas, linear lanceoladas, acuminadas, abrazadoras, semejantes a las florales, 5-6 mm de largo; raquis recto. **Brácteas florales** de más de la mitad del largo del ovario, lanceoladas, largamente acuminadas, abrazadoras, 2-6 mm de largo. **Ovario** terete, delgado, no inflado, no ornamentado, 6-8 mm de largo. **Flores** ca. de 120, simultáneas, resupinadas, "dark blue" a pardo rojizas; sin datos de fragancia. **Sépalos** reflexos, libres, elípticos, obtusos, 1-3 nervados, margen entero, extendido, 3.2-3.8 x 1.8-2 mm; los laterales con un apículo diminuto. **Pétalos** libres, reflexos, lanceolados, agudos, 1-nervados, margen dentado, 3.2-3.5 x 1.1-1.3 mm. **Labelo** libre con respecto a la columna, trilobado, base unguiculada, subcordada, margen crenado, 3.9-4.2 x 5.2-6 mm; ecalloso; lóbulos laterales hemicirculares, 2 x 2.2 mm; lóbulo medio hemicircular-trapezoide, redondeado, 1-1.3 x 1.5-2 mm. **Columna** corta, recta, 2 mm de largo. **Clinandrio** prominente, margen ligeramente eroso. **Rostelo** apical, entero, perpendicular con respecto a la columna. **Antera** reniforme, 4-locular. **Polinios** 4, obovoides; caudiculas suaves y granulosas, del mismo tamaño de los polinios. **Nectario** no visto. **Cápsula** elipsoide, 14 x 7 mm; pedicelo terete, 3 mm de largo; cuerpo 8 x 7 mm; cuello apical 3 mm de largo.

Epiphytic, monopodial **herb** with vertical, scandent growth. **Roots** produced from the base of the main stem and occasionally from subsequent stems, thin. **Stems** thin, the basal half cane-like, the apical half somewhat thickened without becoming fusiform; each new stem produced from an internode bellow the apical thickened half, covered by 2-8 tubular, non-foliar sheaths, becoming fibrous with time. **Leaves** 2-3, aggregate at the apex of the stem, articulate, coriaceous; sheaths tubular; blade linear-lanceolate, the apex obtuse, minutely apiculate. **Inflorescence** apical, racemose, arching, densely many-flowered; peduncle short, terete, thin, provided with 3 small, linear-lanceolate, acuminate, amplexicaul bracts, similar to the floral bracts; rachis straight. **Floral bracts** more than half as long as the ovary, lanceolate, long, acuminate, amplexicaul. **Ovary** terete, thin, not inflated, unornamented. **Flowers** ca. 120, simultaneous, resupinate, "dark blue" to reddish brown. **Sepals** reflexed, free, elliptic, obtuse, 1-3-veined, margin entire, spreading; lateral sepals minutely apiculate. **Petals** reflexed, free, lanceolate, acute, 1-veined, margin dentate, half as wide as the sepals. **Lip** free from the column, 3-lobed, base short unguiculate, sub-cordate, margin crenate; ecallose, lateral lobes hemi-circular; mid-lobe semi-orbicular-trapezoid, rounded. **Column** short, straight, thick. **Clinandrium-hood** prominent, margin slightly erose. **Rostellum** apical, entire, perpendicular to the column. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid; caudicles soft and granulose, as long as the pollinia. **Capsule** ellipsoid, with a short thin pedicel and short, thick, apical neck.

OTHER SPECIMENS: PERU: Without locality, *Collantes s.n.*, USM! **Cusco:** Urubamba, Machu Picchu, 2990 m, 25 IX 1982, *Peyton s.n.*, MO! Ibid. 2800 m, XI 1982, *Peyton 1338*, CUZ! **Huancavelica:** P. N. Yanachaga-Chemillén, 2850 m, 25 IX 2004, *Monteagudo 7342*, MO! (Illustration voucher). Ibid. 3000 m, 1 II 2005, *Montegudo 8085*, MO! Tayacaja, Paraje Chaupimonte, Huachocolpa, 3400 m, 13 II 1999, *Suárez s.n.*, USM! entre Marcavalle y Huachocolpa, 3600 m, 24 IV 1963, *Tovar 4208*, USM!

OTHER RECORDS: PERU: Cusco: Machu Picchu?, photo published in Machu Picchu: Orchids, photo: R. Valencia. Between Paucartambo and Pilcopata, Wayquecha Cloud Forest, 2666 m, 10 XI 2005, *Repasky 121*, digital photo ATRIUM-List of Images (http://atrium.andesamazon.org) Ibid. *Repasky 206*, digital photo ATRIUM-List of Images (http://atrium.andesamazon.org)

DISTRIBUTION AND ECOLOGY: Endemic to central Peru, from San Martin to Cusco, in elfin and low rain forest, at 2950-3600 m altitude. Flowering from August to April.

RECOGNITION: *Epidendrum subliberum* belongs to the Albomarginatum Group which is characterized by the monopodial, vertical, scandent, zigzag habit, stems cane-like below, somewhat thickened along the apical middle-half or third to form a fusiform pseudobulb, the new stem originating just below the thickened part of the previous stem, apically bifoliate; leaves linear-lanceolate to linear-oblong. The species is recognized by the elongate, racemose inflorescence, simultaneous, small flowers (sepals 3.2-3.8 mm long), petals lanceolate, narrow, with the margin dentate, 3.2-3.5 x 1.1-1.3 mm, 1-veined, and the lip with the base sub-cordate, and the mid-lobe rounded. It is very similar to *Epidendrum subliberhombicum* Hágsater & E.Santiago has large leaves (14-22 x 0.6-1.2 cm), larger flowers, sepals 3.5-5.2 mm long, petals ovate-rhombic, the margin entire, 3.5-4.7 x 2.4-2.5 mm, 3-veined, the lip with the base truncate and the mid-lobe widely triangular; the range of distribution overlaps. *Epidendrum albomarginatum* Rchb.f. has a sometimes paniculate inflorescence, sepals 6-8 mm long, petals oblanceolate, rachis fractiflex and the lip united throughout the length of the column. *Epidendrum francisci* Chocce, Hágsater & Acuña has a paniculate inflorescence, the rachis slightly fractiflex, successive flowers, sepals 8 mm long, and the lip entire.

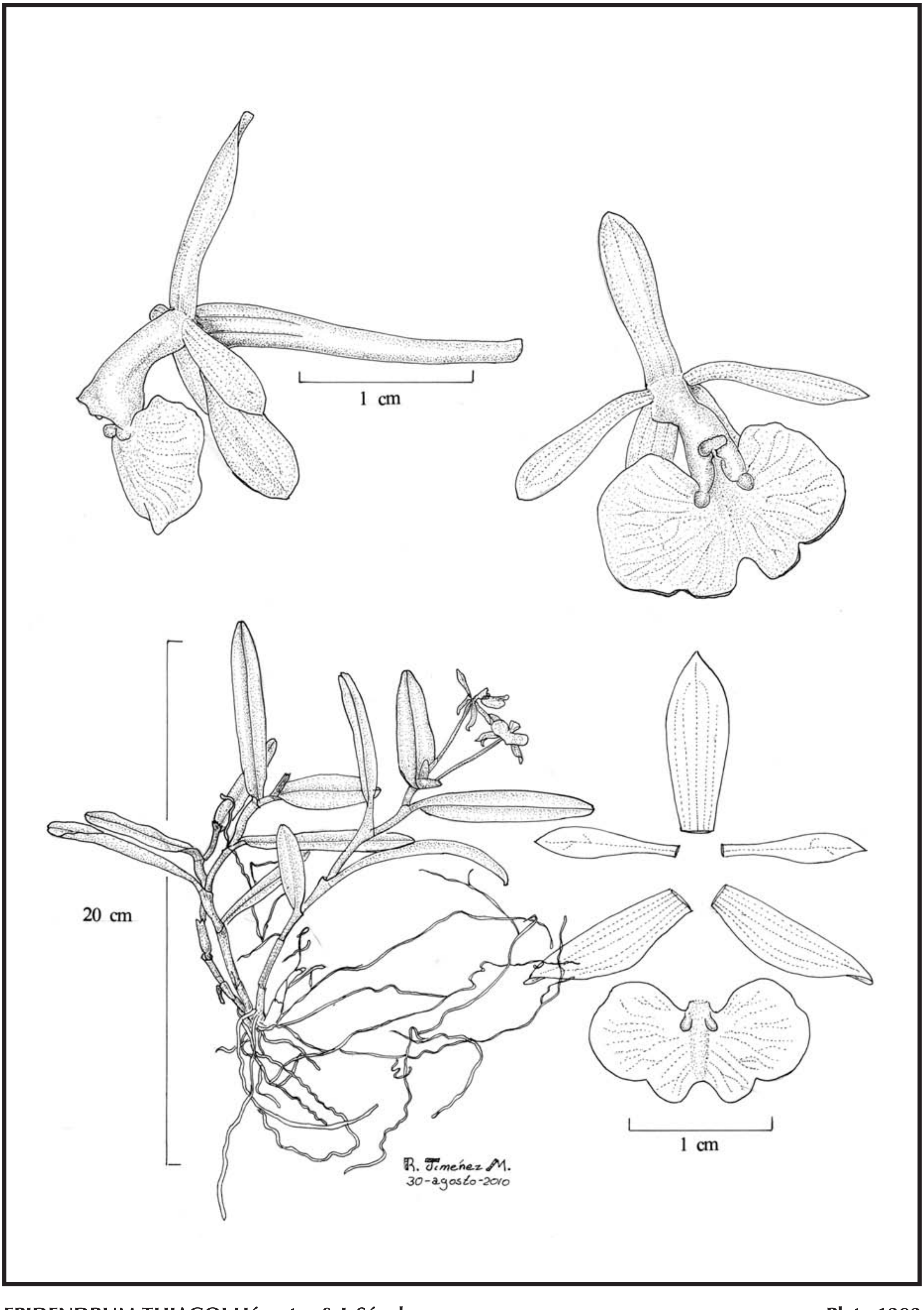


CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *sub*, under, less than, and *liber*, free, thus less than totally free, in reference to the lip which is nearly free of the column, or joined only at the base.

REFERENCE: Christenson E. A. 2003, **Machu Picchu: Orchids: A Manual to the Orchids of the Machu Picchu Historical Sanctuary,** PROFONANPE and Machu Picchu Program, p. 4.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM THIAGOI Hágsater & L.Sánchez **Plate 1393**

EPIDENDRUM THIAGOI Hágsater *et* L.Sánchez, *sp. nov*.

Type: BRAZIL: Distrito Federal: Brasília; Fazenda Água Limpa, 15°55'54.4"S 47°54'11-19"W, 1080 m, 24 febrão 2009, ***Thiago E. C. Meneguzzo, A.K. Peres Júnior & M.S.I. Escobar 59.*** Holotype: UB! (Illustration voucher).

Epidendro compaccii Hágsater & L.Sánchez simile sed caulibus lateraliter aliquantum compressis, foliis angustis, floribus 1-3 simultaneis leviter minoribus, columna leviter arcuata recedens.

Hierba epífita, simpodial, cespitosa, erecta, 12-25 cm de alto incluyendo la inflorescencia. **Raíces** basales, carnosas, delgadas, 0.5-1.0 mm de grosor. **Tallos** sencillos, tipo caña, algo lateralmente aplanados hacia el ápice, ligeramente flexuosos, 8-22 x 0.35-0.75 cm. **Hojas** 4-7, distribuidas a lo largo del tallo, vaina foliar tubular, lateralmente aplanada, lisa, 0.5-3.0 cm de largo; lámina elíptica lanceolada, coriácea, lisa, verde, ápice retuso a asimétricamente bilobado, diminutamente aristado, margen entero, extendido, 3.0-9.5 x 0.8-1.3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, del tallo maduro, subumbelada, pedúnculo corto, inconspicuo. **Bráctea floral** mucho más pequeña que el ovario, triangular, aguda, 5-8 mm de largo. **Flores** 1-3, simultáneas, resupinadas, de color verde; fragancia no registrada. **Ovario** terete, no inflado, no ornamentado, 20-35 x 1.0-1.2 mm. **Sépalos** extendidos, libres, elípticos, ápice obtuso, glabros, coriáceos, 5-nervados, margen entero, revoluto, 12-13 x 3.5-4.0 mm; los **laterales** oblicuos. **Pétalos** extendidos, elípticos a oblanceolados, agudos, membranáceos, 3-nervados, margen entero, extendido, 10-12 x 1.3-2.0 mm. **Labelo** unido a la columna, trilobado, base cordada, margen entero, extendido, 8-10 x 13-15 mm; bicalloso, los callos pequeños, subglobosos; lóbulos laterales semiorbiculares, 7-8 x 4-7 mm; lóbulo medio emarginado, con un seno profundo y amplio formando dos lóbulos pequeños, semiovados, 2-3 x 6-7 mm. **Columna** ligeramente arqueada, delgada, 6-8 mm de largo. **Clinandrio** corto, margen entero. **Antera** no vista. **Polinios** no vistos. **Rostelo** no visto. **Lóbulos laterales del estigma** no vistos. **Nectario** no visto. **Cápsula** subesférica, pedicelo 20-25 mm de largo, cuerpo 18-20 x 8-10 mm, cuello apical 3-5 mm de largo.

Epiphytic, erect, simpodial, caespitose **herb. Roots** basal, fleshy, thin. **Stems** simple, cane-like, somewhat laterally compressed towards the apex, slightly flexuous. **Leaves** 4-7, distributed throughout the stem; sheath foliar, tubular, laterally compressed, smooth; blade lanceolate-elliptic, coriaceous, smooth, green, retuse to asymmetrically bilobed, minutely aristate, margin entire, spreading. **Inflorescence** apical, from the mature stem, sub-umbellate, peduncle short, inconspicuous. **Floral bracts** much shorter than the ovary, triangular, acute. **Flowers** 1-3, simultaneous, resupinate, green. **Ovary** terete, not inflated, unornamented. **Sepals** spreading, free, elliptic, apex obtuse, glabrous, coraiceous, 5-veined, margin entire, revolute; lateral sepals oblique. **Petals** spreading, elliptic to oblanceolate, acute, membranaceous, 3-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base cordate, margin entire, spreading, the lateral lobes about twice as large as the mid-lobe; bicallose, the calli small, sub-globose; lateral lobes semi-orbicular; mid-lobe emarginate, with a wide, deep sinus and thus forming a pair of small, semi-ovate lobes. **Column** slightly arched, thin. **Clinandrium-hood** short, margin entire. **Capsule** sub-spherical, pedicel about as long as the body, apical neck short.

OTHER SPECIMENS: BRAZIL: Goiás: Alexania, margem direita do lago Corumbá IV, área de influencia direta (lago), 830 m, 6 VI 2005, *Pereira-Silva 10103*, CEN! **Distrito Federal:** Brasília, Reserva Ecológica do IBGE, Mata ciliar do córrego Taquara / UNB, 12 VII 1989, *Azevedo 240*, IBGE! Brasília/Riacho Fundo, região CO, Fazenda Sucupira (CENARGEN), Região entre o Recanto das Emas e o Riacho Fundo, 1100 m,13 I 1998, *Walter 3963*, CEN! **Minas Gerais:** Cabeceira Grande, Estrada Palmital, cerca de 7 km a esquerda, ca. 4 km apos a entrada, 20 II 2003, *Santos 1879*, CEN!

DISTRIBUTION AND ECOLOGY: Endemic to the Plantalto of Brazil, known from the states of Goiás, Distrito Federal and Minas Gerais. Epiphytic at 830-1100 m altitude. Flowering from January and February. Fruiting in June and July.

RECOGNITION: *Epidendrum thiagoi* belongs to the Difforme Group which is characterized by the caespitose, sympodial plants, fleshy, pale green to glaucous leaves, apical inflorescence, sessile, rarely with a short peduncle, one-flowered to corymbose, without spathaceous bracts, fleshy, green to yellowish-green rarely white flowers. The species is recognized by the 12-25 cm tall plants, stems somewhat laterally compressed, with 4-7 narrow leaves (0.8-1.3 cm wide), 1-3, simultaneous flowers, a 3-lobed lip, the lateral lobes sub-orbicular, the mid-lobe with a pair of semi-ovate lobes separated by a wide sinus, and the column 6-8 mm long. It is similar to *Epidendrum campaccii* which has terete stems, wider leaves (1.6-2.6 cm wide), 5-8, large, successive flowers, sepals 11-15.4 mm long), and the disc of the lip with drops of nectar at the base, column straight, 10.5-11 mm long. *Epidendrum linearidifforme* Hágsater & L.Sánchez from the Guyana Shield has narrower leaves, 0.4-0.6 mm wide, sub-quadrate lateral lobes, and the mid-lobe transversely rectangular with a mucro in the sinus. *Epidendrum pseudodifforme* Hoehne & Schltr. grows along the Mata Atlântica of Brazil at 200-800 m altitude, has shorter plants, to 11-15 cm tall, terete stems with somewhat wider leaves (1.5-1.7 cm), larger flowers, the margin of the lip irregularly crenulate, and a somewhat longer column, 8-9 mm long. *Epidendrum carnevali* Hágsater & L.Sánchez grows along the Northern coast of Colombia and Venezuela, has 4-12-leaved stems, 5-10 simultaneous flowers, sepals 13.5-18 mm long, the calli of the lip acute, elongate and divergent, the mid-lobe emarginated, forming a pair of wide, divergent lobes, and the column and ovary papillose. *Epidendrum chlorocorymbos* Schltr. widely distributed along the Caribbean coast from Mexico to Colombia has plants to 45 cm tall, terete stems, 1.0-2.5 cm wide leaves, 5-20 simultaneous flowers with sepals 13-19.5 mm long

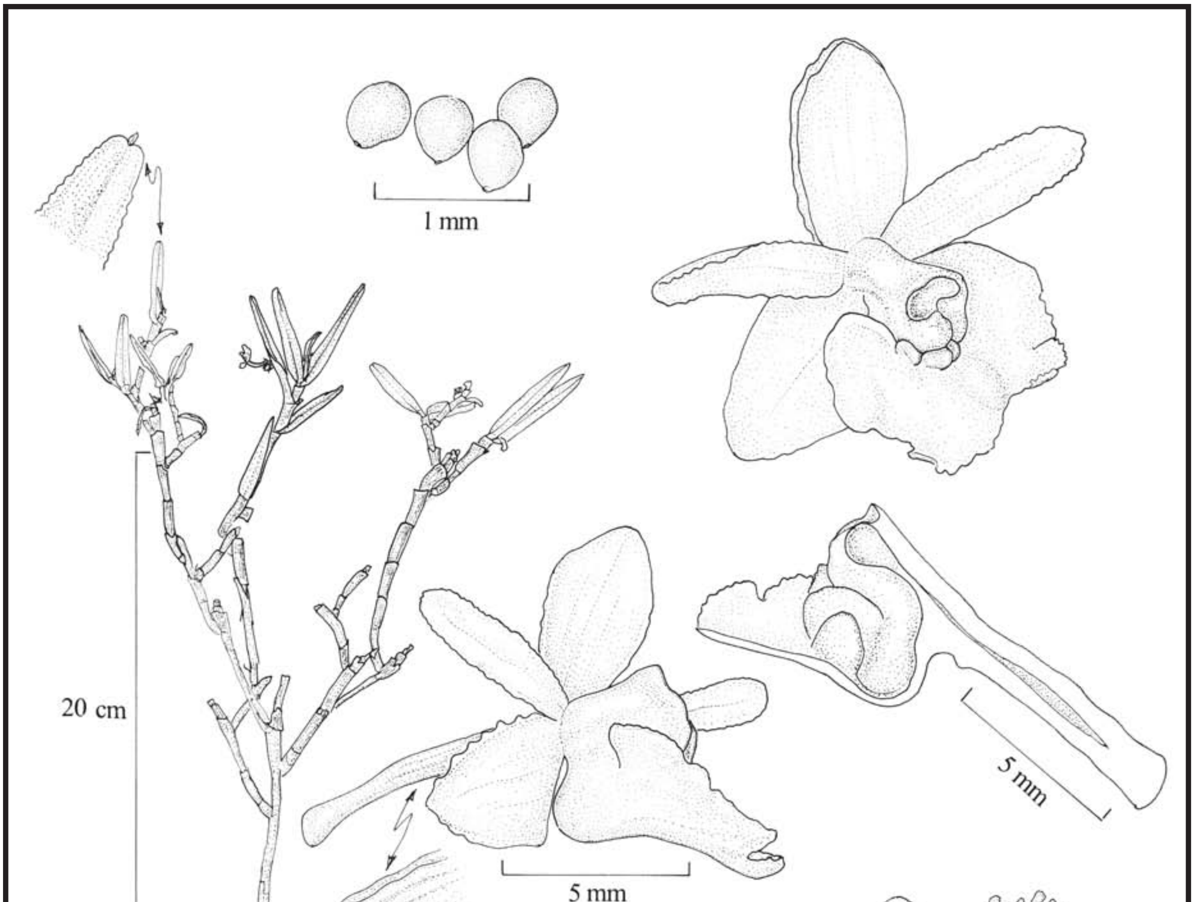


CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Thiago Erir Cadete Meneguzzo (b. 1987), graduate from the Universidade de Brasília, who brought this species to our attention, and has been working on the orchids for the Flora do Distrito Federal, the capital of Brazil.

REFERENCES: Hágsater, E., & L. Sánchez, 1993, *Epidendrum campaccii* Hágsater & L.Sánchez, *in* E. Hágsater & G. A. Salazar. **Icon. Orchid. (Mexico)** 2: pl. 117. Hágsater, E., & L. Sánchez, 1999, *Epidendrum carnevalii* Hágsater & L.Sánchez, *in* E. Hágsater, L. Sánchez & J. García-Cruz. **Icon. Orchid. (México)** 3: pl. 321. Hágsater, E., & L. Sánchez, 1999, *Epidendrum linearidifforme* Hágsater & L.Sánchez, *in* E. Hágsater, L. Sánchez, & J. García-Cruz. **Icon. Orchid. (México)** 3: pl. 346. Hágsater, E. & L. Sánchez, 2009, *Epidendrum chlorocorymbos* Schltr. *in* E. Hágsater & L. Sánchez, **Icon. Orchid. (Mexico)** 12: pl. 1223.

Authors: E. Hágsater & L. Sánchez S. **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM TRACHYPENTATROPIS Hágsater & E.Santiago **Plate 1394**

EPIDENDRUM TRACHYPENTATROPIS Hágsater *et* E.Santiago, *sp. nov.*

Type: PERU: Cusco: Calca, Dist. Lares, Choquecancha, Arenal, 4137 m, 19 February 2005, ***L. Valenzuela, E. Suclli & J. Farfán 5019.*** Holotype: MO! (Illustration voucher) Isotype: CUZ! Probable isotype (cited in *Tropicos,* not seen): USM.

Species *Epidendro trachysepalo* Hágsater similis, foliis brevioribus, inflorescentia floribusque parvioribus, petalis lineari-oblongis, uninervis, labello quasi omnino columnae adnato, disco quinque carinis laminiformibus dissimilis prominentibus recedit.

Hierba epífita, monopodial, ramificada, de 25-60 cm de alto. **Raíces** basales del tallo inicial y a lo largo de algunos entrenudos basales del mismo, carnosas, delgadas, ca. 1 mm de grosor. **Tallos** muy ramificados, las ramificaciones producidas de los entrenudos apicales de los tallos anteriores, tipo caña, teretes, delgados, rectos; el inicial 12-20 x 0.2-0.4 cm; las ramificaciones 2-7.5 x 0.15-0.35 cm. **Hojas** 2-6, distribuidas en la mitad apical de los tallos, dísticas, articuladas, subcoriáceas; vaina tubular, finamente estriada, 5-14 x 2-4 mm; lámina linear lanceolada, ápice subobtuso, diminutamente apiculado, margen entero, extendido, 1.8-4.2 x 0.3-0.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, arqueada nutante, corta, pauciflora, subdensa, florece una sola vez, ca. 1.0-1.3 cm de largo; pedúnculo corto, 6 mm de largo. **Brácteas florales** prominentes, de más de la mitad del largo del ovario, triangulares, acuminadas, abrazadoras, 2-5 mm de largo. **Flores** 10-14, simultáneas, resupinadas, de color rojizo; sin datos de fragancia. **Ovario** terete, delgado, no inflado, con quillas longitudinales incipientemente crestadas, ca. 7 mm de largo. **Sépalos** libres, extendidos, ovado elípticos, subobtusos, dorsalmente muricados, margen entero, extendido, 5.5-5.7 x 2.8-3.5 mm; el **dorsal** 3-nervado; los **laterales** oblicuos, 1-nervados. **Pétalos** extendidos, libres, linear oblongos, redondeados, 1-nervados, margen crenulado, extendido, 5 x 1.5 mm. **Labelo** unido casi en su totalidad a la columna, en aspecto general subpanduriforme, incipientemente trilobado, con la base prominentemente saquiforme, ligeramente cordada, margen eroso, 5.5 x 5.5 mm; disco ecalloso, con 5 quillas laminares prominentes, desiguales en tamaño (las externas reducidas, subcuadradas y casi ocultas por completo bajo un par de quillas más grandes, semiovadas, que parecen como dos callos debajo del ápice de la columna en posición natural, la quilla central mas pequeña y corta, semitrapezoide), y una quilla engrosada alargada hasta el ápice de la lamina; lóbulos laterales semicirculares, 2 x 3 mm; lóbulo medio transversalmente rectangular, profundamente emarginado, formando un par de lóbulos subcuadrados, 2.6 x 3 mm. **Columna** recta, corta, 4 mm de largo. **Clinandrio** corto, margen entero. **Antera** no vista. **Polinios** 4, obovoides; caudículas no vistas. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** amplio, sin penetrar el ovario, no ornamentado, formando la estructura saquiforme en la base del labelo.

Epiphytic, monopodial, branching **herb. Roots** from the base and some of the lower internodes of the main stem, fleshy, thin. **Stems** much branching, the branches produced from the apical internodes of the previous stems, cane-like, terete, thin, straight, the initial main stem much longer than the branches. **Leaves** 2-6, distributed along the apical half of the stem, distichous, articulate, sub-coriaceous; sheaths tubular, minutely striated; blade linear-lanceolate, apex sub-obtuse, minutely apiculate, margin entire, spreading. **Inflorescence** apical, racemose, arching-nutant, short, sub-densely few-flowered, flowering only once, peduncle short. **Floral bracts** prominent, more than half as long as the ovary, triangular, acuminate, amplexicaul. **Flowers** 10-14, simultaneous, resupinate, reddish. **Ovary** terete, thin, not inflated, with low crested longitudinal keels. **Sepals** free, spreading, ovate-elliptic, sub-obtuse, dorsally muricate, margin entire, spreading; dorsal sepals 3-veined, lateral sepals oblique, 1-veined. **Petals** spreading, free, linear-oblong, rounded, 1-veined, margin crenulate, spreading. **Lip** nearly totally united to the column, sub-panduriform in outline, somewhat 3-lobed, the base slightly cordate and prominently sacciform, margin erose; disc ecallose, with 5 prominent laminar keels unequal in size (the outer pair reduced, sub-quadrate and nearly totally hidden beneath the pair of very large, semi-ovate keels, the only pair which is visible bellow the apex of the column in natural position, the central keel smaller, semi-trapezoid), and a thickened keel elongate to the apex of the lip; lateral lobes semi-circular; mid-lobe transversely rectangular, deeply emarginated, forming a pair of sub-quadrate lobes. **Column** straight, short. **Clinandrium-hood** short, margin entire. **Pollinia** 4, obovoid. **Rostellum** apical, slit. **Nectary** wide, without penetrating the ovary, unornamented, forming the large sack-like structure at the base of the lip.

OTHER SPECIMENS: None seen.



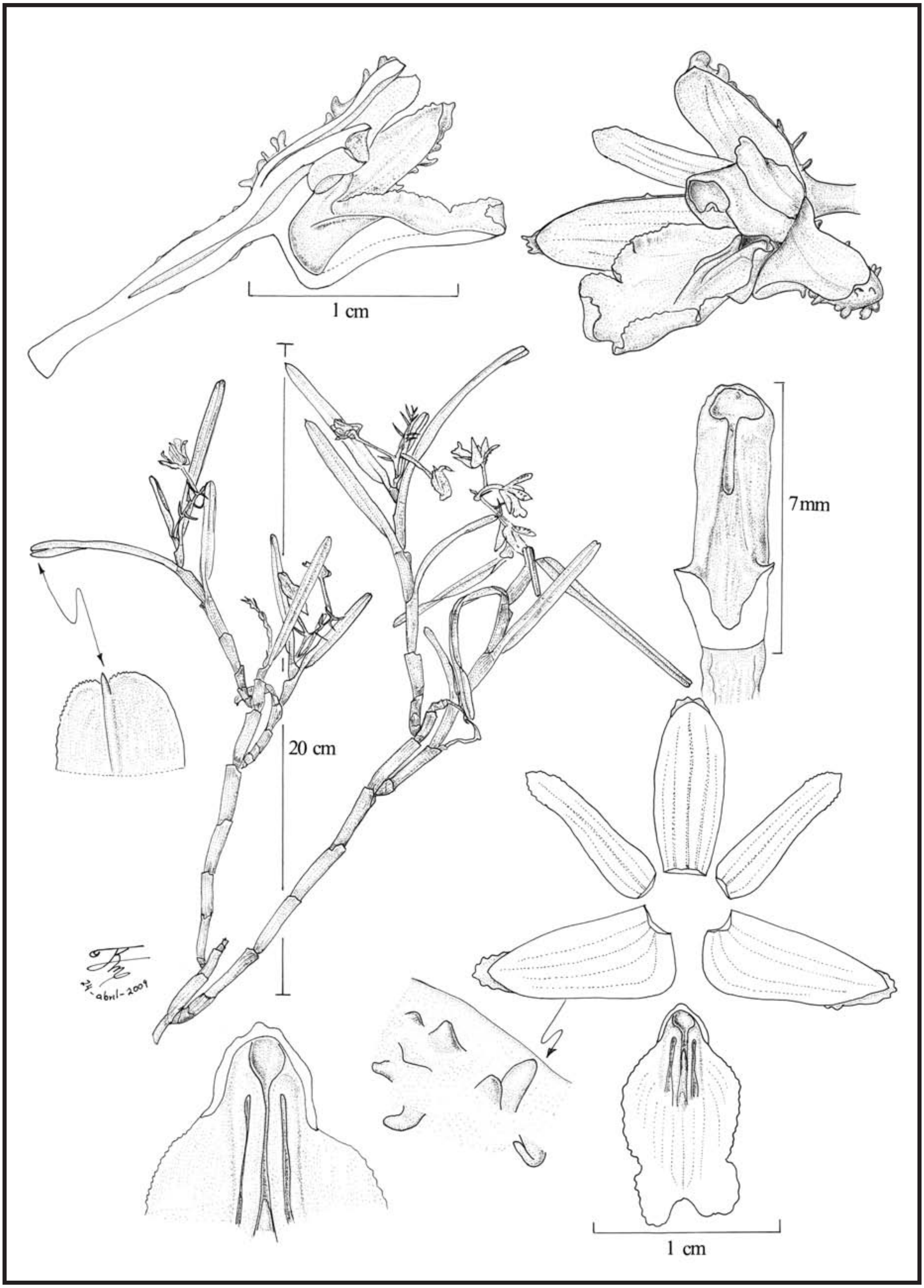
DISTRIBUTION AND ECOLOGY: Known only from the type, from the Cordillera Oriental in southern Peru, Province of Cusco; epiphytic at 4137 m altitude. Flowering in February.

RECOGNITION: *Epidendrum trachypentatropis* belongs to the Diothonea Group and Subgroup which is characterized by the branching plants, linear lanceolate to oblong, bilobed leaves, racemose, arching-nutant inflorescence, membranaceous flowers (rarely fleshy), the entire to 3-lobed, ecallose lip with the margin erose without or with 1-10 thin, smooth to erose keels, the column completely to obliquely united to the lip, the anther reniform. The species is recognized by the small reddish flowers, sepals 5.5-5.7 mm long and dorsally muricate, and the sack-like lip nearly totally united to the column, with 5 prominent, unequal, laminar keels hidden below the column. *Epidendrum trachysepalum* has similar colored flowers, but larger, (sepals 9-5-11 mm long), the lip totally free from the column, with 3 very low keels. *Epidendrum gastrochilum* Kraenzl. only has 3-5, larger flowers, unornamented sepals 11-15 mm long, and the lip entire, flat.

CONSERVATION STATUS: DD. Data deficient. Known from the edge of the Parque Nacional del Manú.

ETYMOLOGY: From the Greek πεντα- five, τροπις, the keel of a ship, and τραχυς rough, shaggy, in reference to the prominent five keels of the lip, as well as the dorsally muricate sepals of the species; the prominent keels distinguish this species from the similar *Epidendrum trachysepalum*.

Authors: E. Hágsater & E. Santiago **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM TRACHYSEPALUM Hágsater **Plate 1395**

EPIDENDRUM TRACHYSEPALUM Hágsater, Orquídea (Méx.) 12(2): 296.1992.

Basionym: *Diothonea exasperata* C. Schweinf., Bot. Mus. Leafl. 15(3): 107. 1951. Type: PERU: Cusco: Prov. Paucartambo, Pillahuata, 2800 m, 25 January 1945, ***C. Vargas C. 4953***. Holotype: AMES! Isotypes: CUZ x2! Non *Epidendrum exasperatum* Rchb.f., Beitr. Orch. Centr. Amer. 87. 1866.

Hierba epífita, monopodial, subapicalmente ramificada, de 30-40 cm de alto. **Raíces** basales del tallo primario, carnosas, delgadas. **Tallos** escasamente ramificados subapicalmente, tipo caña, teretes, delgados, rectos, 6-27 x 0.2-0.5 cm; las ramificaciones 4-13 x 0.3-0.5 cm. **Hojas** 4-6, distribuidas en el ápice de los tallos, dísticas, articuladas, subcoriáceas, desiguales en tamaño; vaina tubular, finamente estriada, 5-24 x 2-5 mm; lámina linear lanceolada, ápice subobtuso, diminutamente apiculado, margen entero, extendido, 2.5-8.5 x 0.4-0.6 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, arqueada, corta, pauciflora, subdensa, florece una sola vez, ca. 2.5-3 cm de largo; pedúnculo corto, 6 mm de largo. **Brácteas florales** de la mitad del largo del ovario, triangulares, acuminadas, 5-7 mm de largo. **Flores** 9-11, simultáneas, resupinadas, de color rosado pálido a rojizo; sin datos de fragancia. **Ovario** terete, delgado, no inflado, no ornamentado, ca. 10-15 mm de largo. **Sépalos** libres, agudos, 3-nervados, con una quilla dorsal erosa, dorsalmente muricados, margen entero, extendido; el **dorsal** extendido, angostamente elíptico, 9.5 x 3.5 mm; los **laterales** entreabiertos, angostamente ovados, muy oblicuos, 11 x 5 mm. **Pétalos** entreabiertos, libres, linear oblanceolados, subobtusos, 3-nervado, margen diminutamente dentado, extendido, 10 x 2.5 mm. **Labelo** panduriforme, libre con respecto a la columna, trilobado, con la base ligeramente cuneada, saquiforme, margen eroso, 11-12.8 x 6.0-7.5 mm; disco ecalloso, con 3 quillas lisas, cortas, ubicadas en la base del labelo (la quilla central más pequeña); lóbulos laterales evidentes, tan grandes, como cada mitad del lóbulo medio, semiobovados, 2-3 x 5-6 mm; lóbulo medio subdeltado a transversalmente rectangular, bilobado, el seno anchamente apiculado, formando un par de lóbulos semiobovados, redondeados, 3-4 x 5.5-6 mm. **Columna** recta, delgada en el ápice y gradualmente más amplia hacia la base, con un pié de columna prominente y los bordes de la superficie ventral carnosos, rectos, 6-7 mm de largo. **Clinandrio** prominente (aunque sin sobrepasar el ápice de la columna), margen entero. **Antera** y **Polinios** no vistos. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** amplio, sin penetrar el ovario, no ornamentado.

Epiphytic, monopodial **herb** sub-apically branched. **Roots** basal, from the primary stem, fleshy, thin. **Stems** scarcely branching sub-apically, cane-like, terete, thin, straight. **Leaves** 4-6, distributed towards the apex of the stem, distichous, articulate, sub-coriaceous, unequal in size; sheath tubular, minutely striated; blade linear-lanceolate, apex sub-obtuse, minutely apiculate, margin entire, spreading. **Inflorescence** apical, racemose, arching, short, somewhat densely few-flowered, flowering only once; peduncle short. **Floral bracts** half as long as the ovary, triangular, acuminate. **Flowers** 9-11, simultaneous, resupinate, pale pink to reddish. **Ovary** terete, thin, not inflated, smooth. **Sepals** free, acute, 3-veined, with an erose dorsal keel, dorsally muricate, margin entire, spreading; dorsal sepal spreading, narrowly elliptic; lateral sepals partly spreading, narrowly ovate, very oblique. **Petals** partly spreading, free, linear-oblanceolate, sub-obtuse, 3-veined, margin minutely dentate, spreading. **Lip** pandurate, free from the column, 3-lobed, base truncate, saccate, margin erose; disc ecallose, with 3 smooth, short keels at the base (the central keel smaller); lateral lobes evident, similar in size to each half of the mid-lobe, semi-obovate; mid-lobe sub-deltate, bilobed, the sinus widely apiculate, each lobe semi-obovate, rounded. **Column** straight, thin towards the apex, the base gradually widened, with a prominent column foot, and the margins of the ventral surface fleshy, straight. **Clinandrium-hood** prominent (though not surpassing the body of the column), margin entire. **Rostellum** apical, slit.

OTHER SPECIMENS: PERU: Cusco: Pillahuata ca. 130 km en el camino [Cusco] hacia Pilcopata, 2000 m, 4 IV 1987, *Núñez 7760*, F! MO! (Illustration voucher). Between Paucartambo and Pilcopata, Wayquecha Cloud Forest, 3133 m, 6 XII 2005, *Repasky 171*, BRIT!

OTHER RECORDS: PERU: Cusco: Between Paucartambo and Pilcopata, Wayquecha Cloud Forest, 2800-2950 m, 27 II 2004, *Janovec 2774*, digital photo ATRIUM-List of Images (http://atrium.andesamazon.org) Between Paucartambo and Pilcopata, Wayquecha Cloud Forest, 3133 m, 6 XII 2005, *Repasky 171*, digital photo ATRIUM-List of Images (http://atrium.andesamazon.org)

DISTRIBUTION AND ECOLOGY: Known only from southern Peru, along the upper ridge of the Amazon slope of the Andes, epiphytic at 2000-2700 m altitude. Flowering from January to April.



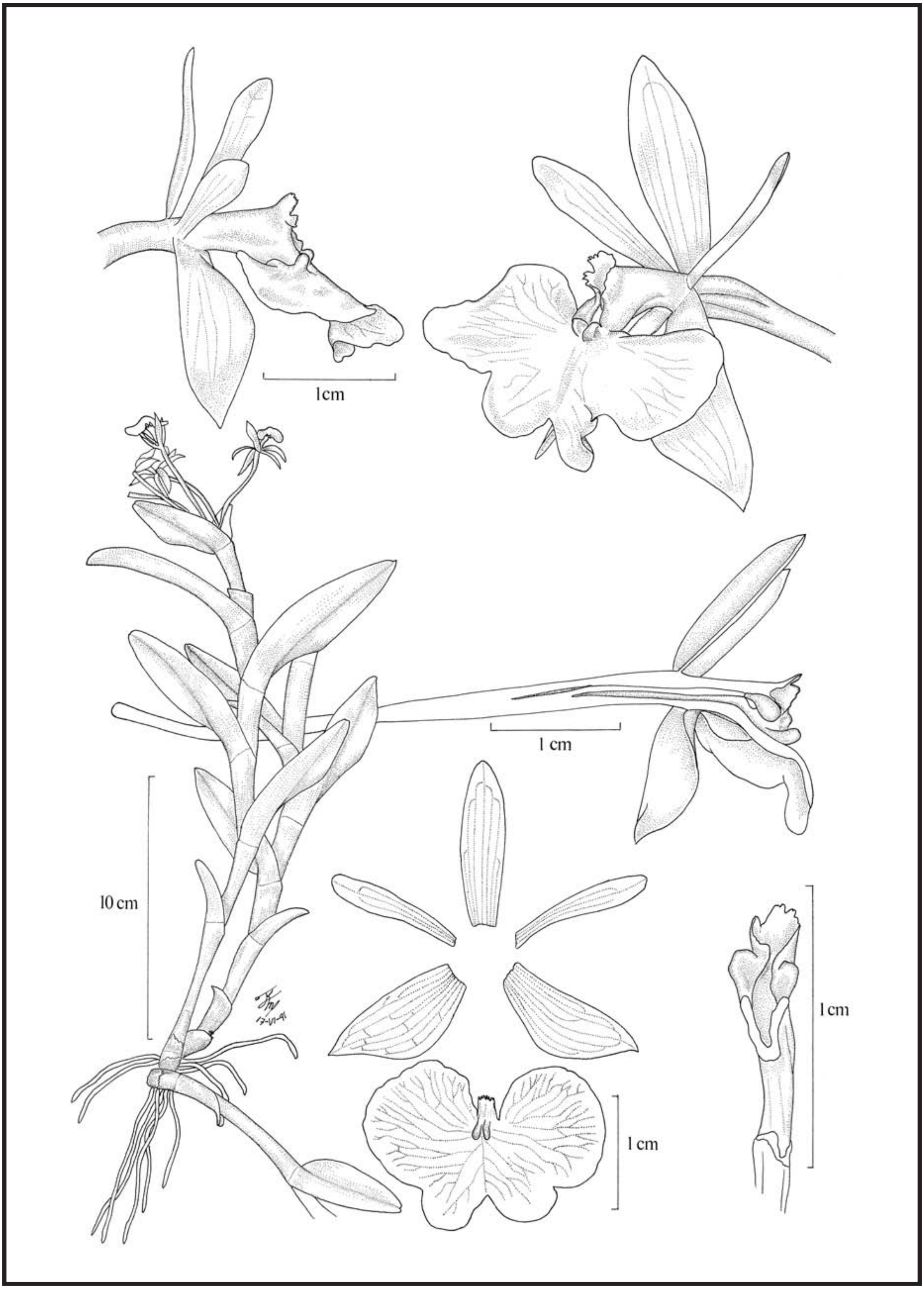
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RECOGNITION: *Epidendrum trachysepalum* belongs to the Diothonea Group and Subgroup which is characterized by the branching plants, linear lanceolate to oblong, bilobed leaves, racemose, arching-nutant inflorescence, membranaceous flowers (rarely fleshy), the entire to 3-lobed, ecallose lip with the margin erose without or with 1-10 thin, smooth to erose keels, the column completely to obliquely united to the lip, the anther reniform. The species is recognized by the pink to reddish flowers, dorsally muricate sepals, the slender column nearly totally free from the lip with a prominent column-foot, the panduriform lip with 3, low, very short keels. *Epidendrum cryptotropis* Hágsater, Collantes & E.Santiago has yellow flowers with purple veins, the sepals dorsally smooth, and the lip sub-entire, with 5 crested keels, the column nearly totally united to the column, with a pair of rounded wings at the apex. *Epidendrum gastrochilum* Kraenzl. has up to 5, somewhat larger flowers spaced on the rachis, sepals 14-16 mm long, the lip ovate-orbicular, the base cuneate, column nearly totally united to the lip without forming a column-foot. *Epidendrum heterothoneum* (Rchb.f. & Warsc.) Hágsater & Dodson has dorsally smooth sepals, a bidentate column nearly totally united to the lip, and the lip without keels. *Epidendrum trachypentatropis* Hágsater & E.Santiago though also with muricate sepals has a sack-like lip, the column nearly totally united to it, and 5 unequal, prominent, laminar keels hidden beneath the column.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek τραχυς rough, shaggy and sepalum, in reference to the dorsally muricate sepals of the species.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM UMBELLATUM Sw. **Plate 1396**

EPIDENDRUM UMBELLATUM Sw., Prodr. Veg. Ind. Occ. 121. 1788.

Type: JAMAICA**:** [Without locality], ***Swartz s.n.*** Holotype: BM!

Synonym: *Caularthron umbellatum* (Sw.) Raf., Fl. Tellur. 2: 41. 1837.

Hierba epífita, simpodial, cespitosa, 14-41 cm de alto. **Raíces** basales, carnosas, delgadas, 1-2 mm de grosor. **Tallos** sencillos, tipo caña, algo lateralmente comprimidos, flexuosos, 9-33.5 x 0.2-0.8 cm. **Hojas** 4-11, equidistantes a lo largo del tallo; vaina foliar lateralmente comprimida, lisa, 1.5-3.8 cm de largo; lámina foliar lanceolada a anchamente elíptica, ápice retuso, no ornamentada, margen entero, carina dorsal ausente, suculenta, verde, 3.8-8.6 x 1.3-2.5 cm. **Inflorescencia** apical, en el tallo maduro, subcorimbosa a subumbelada, florece una sola vez, sésil. **Bráctea floral** más pequeña que el ovario, ovada, redondeada, 8-10 x 3-4 mm. **Flores** 4-6, resupinadas, simultáneas, verdes. **Ovario** ligeramente inflado desde la mitad hacia el perianto, terete, no ornamentado, 25-49 x 1.5-2.5 mm. **Sépalos** glabros, extendidos, libres, subcoriáceos, elípticos, agudos, 5-nervados, con numerosas nervaduras secundarias dando la apariencia de ser 7-nervados, margen entero, revoluto, quilla dorsal prominente, el **dorsal** 13.2-15.4 x 2.5-3.5 mm, los **laterales** oblicuos, 11.5-15.5 x 4.5-6 mm. **Pétalos** extendidos, espatulados, ápice agudo, 3-nervados, margen entero, extendido, subcoriáceos, 11-14 x 2.3-3 mm. **Labelo** unido a la columna, trilobado, coriáceo, margen entero, 12-14 x 19-21 mm; bicalloso, los callos, subglobosos, prominentes; lóbulos laterales semiorbiculares, 5-7 x 10-12 mm; lóbulo medio bilobado con los lóbulos semiorbiculares claramente bien formados, 3-4 x 9-10 mm. **Columna** recta a ligeramente arqueada, delgada, 8-12 x 2-3.2 mm. **Clinandrio** prominente, entero, margen eroso, 1.5-2 mm de largo. **Antera** subesférica, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, ligeramente más largas que los polinios; viscidio viscoso, translúcido. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** cubriendo 1/2 de la cavidad estigmática. **Nectario** penetrando 1/2 del ovario, no ornamentado. **Cápsula** subglobosa, cuerpo 25-26.7 x 25 mm.

Epiphytic, simpodial, caespitose **herb**. **Stems** simple, cane-like, somewhat laterally compressed, flexuous. **Leaves** 4-11; somewhat laterally compressed; blade lanceolate to widely elliptic, retuse, unornamented, succulent, green, margin entire. **Inflorescence** apical, sub-corymbose to sub-umbellate, flowers only once, sessile. **Floral bracts** shorter than the ovary, ovate, rounded. **Flowers** 4-6, resupinate, simultaneous, green. **Ovary** somewhat inflated toward the apex, terete, unornamented. **Sepals** glabrous, spreading, free, sub-coriaceous, elliptic, acute, prominently keeled, margin entire, revolute, the **dorsal** 5-veined, with the lateral veins bifurcate; the **laterals** somewhat oblique. **Petals** spreading, spatulate, acute, sub-coriaceous, 3-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, coriaceous, margin entire; bicallose, the calli sub-globose, prominent; lateral lobes semi-orbicular; mid–lobe bilobed, the lobes semi-orbicular. **Column** straight to somewhat arcuate. **Clinandrium-hood** prominent, entire, margin erose. **Anther** sub-spherical, 4-celled. **Pollinia** 4, obovoid, laterally compressed, sub-equal; caudicles soft and granulose, somewhat longer than the pollinia; viscidium viscous, translucent. **Rostellum** subapical, slit. **Lateral lobes of the stigma** covering 1/2 of the stigmatic cavity. **Nectary** penetrating 1/2 of the ovary. **Capsule** sub-globose.

OTHER SPECIMENS: See appendix.

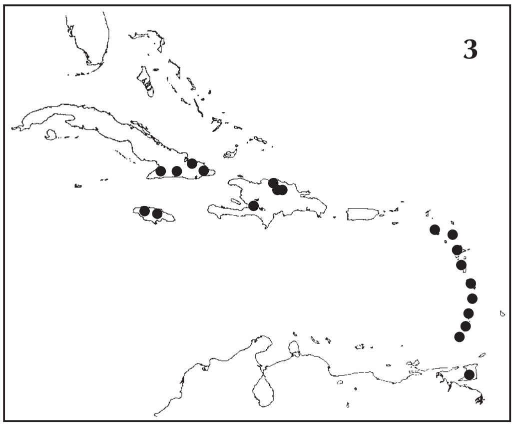
DISTRIBUTION AND ECOLOGY: Widespread in West Indies. Growing epiphytic, in cloud and rain forests, from 330 to 1500 m altitude. Flowering throughout the year, mainly from May to September.

RECOGNITION: *Epidendrum umbellatum* belongs to the Difforme Group which is characterized by the caespitose, sympodial plants, fleshy, pale green to glaucous leaves, apical inflorescence, sessile, rarely with a short peduncle, one-flowered to corymbose, without spathaceous bracts, fleshy, green to yellowish-green, rarely white flowers. The species can by recognized by its vigorous plants, wide, somewhat laterally compressed stems, succulent leaves, 4-6 flowers, 3-lobed lip, bilobed mid-lobe of the lip with semi-orbicular lobes. *Epidendrum difforme* Jacq. differs by the ancipitose stems, coriaceous leaves, sub-quadrate, revolute mid-lobe of the lip.

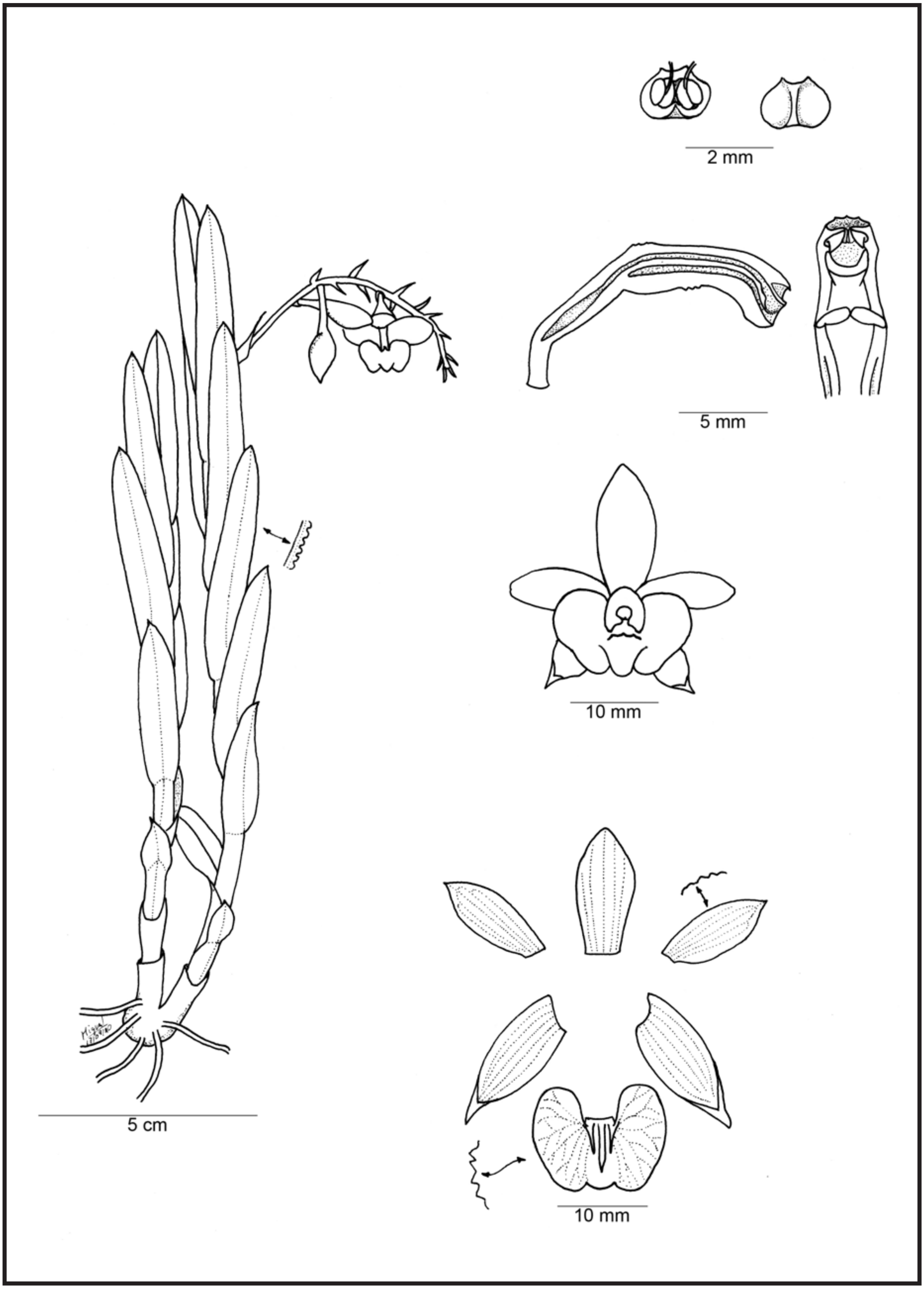
CONSERVATION STATUS: Apparently not threatened, widespread in West Indies, very abundant in south-eastern Cuba.

ETYMOLOGY: From the Latin *umbella*, sunshade, parasol, in reference to the parasol-shaped inflorescence.

REFERENCES: Schultes, R. E., 1960, **Native Orchids of Trinidad and Tobago,** Pergamon Press, p.104. Garay, L. A., & H. R. Sweet, 1974, **Flora of the Lesser Antilles-Orchidaceae,** Arnold Arboretum, Harvard University, Jamaica Plain, Massachusetts, p. 133. Fawcett, W., & A. B. Rendle, 1910. **Flora of Jamaica: 1. Orchidaceae,** London, p. 88.



Authors: L. Sánchez S. & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM VEGAE Chocce & Hágsater **Plate 1397**

EPIDENDRUM VEGAE Chocce *et* Hágsater, *sp. nov.*

Type: PERU: Amazonas: Prov. Luya: Colcamar, matorral de Jalca, cerca al Área de Conservación Privada Huiquilla, 3426 m, 20 de Mayo de 2010, ***Nanette Vega y S. Faustino 1043.*** Holotype: USM! (Illustration voucher).

Epidendro jalcaënse Chocce, Dalström, Hágsater & Arnaiz simile sed habitu minore, sepalis et petalis 5-nervatis, labelli lobulo medio semiorbiculari, columna breviore.

Hierba litófita, erecta, simpodial, cespitosa, hasta 19 cm de alto. **Raíces** basales, carnosas, blancas, 2-2.5 mm de grosor. **Tallo** sencillo, tipo caña, terete, delgado, recto, 6-14 x 0.4-0.5 cm. **Hojas** hasta 13, alternas, suberectas, distribuidas desde la base hasta el ápice, articuladas; vainas tubulares, estriadas, lisas, 2 x 1 cm; lamina angostamente elíptica, ápice agudo, mucronado, coriácea, verde, margen crenado, extendido, 1-5.7 x 0.6-0.9 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, arqueada, densa, multiflora, 10 cm de largo; pedúnculo corto, terete, delgado, ligeramente arqueado, 1.8 cm de largo; raquis delgado, terete, arqueado. **Brácteas florales** más cortas que el ovario, triangulares, 4-6 x 1.5 mm. **Ovario** 3-sulcado, 7-8 mm de largo. **Flores** hasta 14, simultaneas, resupinadas, de rojo a naranja brillante; sin fragancia. **Sépalos** libres, carnosos, margen entero, extendido, 5-nervados, aristados; el **dorsal** extendido, oblanceolado, obtuso, 14 x 6.5 mm; los **laterales** entre abiertos, elípticos, con una quilla dorsal, 17-18 x 7 mm. **Pétalos** libres, arqueados hacia abajo y extendidos transversalmente, oblongo elípticos, oblicuos, ligeramente aristados, 5-nervados, margen finamente eroso, extendido, 13.5 x 5 mm. **Labelo** unido a la columna, trilobado, basalmente profundamente cordado, extendido, 12 x 15 mm (parte libre); ecalloso, disco provisto con 3 quillas, paralelas bajas que desaparecen hacia la mitad del labelo, la central mas larga que las laterales; lóbulos laterales reniformes, mucho más grandes que el lóbulo medio, margen eroso, extendido, 12 x 6 mm; lóbulo medio semiorbicular, pequeño, carnoso, margen entero, extendido, 1 x 3 mm. **Columna** delgada, arqueada, 7.5 mm de largo. **Clinandrio** corto, escasamente tridentado. **Antera** reniforme, 4-locular. **Polinios** 4, obovoides, comprimidos. **Rostelo** apical, hendido. **Nectario** penetrando menos de 1/3 del ovario, delgado, liso.

Plant lithophytic, erect, sympodial, caespitose, to 19 cm tall. **Roots** basal, fleshy, white, thick. **Stem** simple, cane-like, terete, thin, straight. **Leaves** to 13, alternate, sub-erect, distributed throughout the stem, articulated; sheaths tubular, grooved, smooth; blade narrowly elliptical, apex acute, mucronate, coriaceous, green, margin crenate, spreading. **Inflorescence** apical, racemose, arching, dense, many-flowered; peduncle short, terete, thin, slightly arched; rachis thin, terete, arching. **Floral bracts** shorter than the ovary, triangular. **Ovary** long, 3-grooved. **Flowers** up to 14, simultaneous, resupinate, glossy red to bright orange; without fragrance. **Sepals** free, fleshy, margin entire, 5-veined, aristate; the **dorsal** spreading, oblanceolate, obtuse;the **laterals** partly spreading, elliptic, with a dorsal keel. **Petals** free, arching downwards and spreading transversely, elliptic-oblong, oblique, slightly aristate, 5-veined, margin minutely erose, spreading. **Lip** united to the column, 3-lobed, basally deeply cordate; ecallose, disc provided with 3 low keels that reach the middle of the lip, the mid-keel longer than the laterals; lateral lobes reniform, much larger than the mid-lobe, margin erose, spreading; mid-lobe semi-orbicular, very small, fleshy, margin entire, spreading. **Column** thin, arched, long. **Clinandrium-hood** short, shallowly 3-dentate. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, compressed. **Rostellum** apical, slit. **Nectary** penetrating less than 1/3 of the ovary, thin, smooth.

OTHER SPECIMENS: PERU: Amazonas: Prov. Luya: Colcamar, pajonal de Jalca, cerca al Área de Conservación Privada Huiquilla, 3426 m, 20 V 2010, *Vega 1045*, USM! Ibid. *Vega 1046*, USM! Ibid. *Vega 1053*, USM!

DISTRIBUTION AND ECOLOGY: Known only from the type locality in Luya Province, Amazonas, Peru, where it is abundant at 3400-3500 m altitude. Lithophytic on rocks in woodland and grassland (matorral y pajonal de Jalca). Flowering in May.

RECOGNITION: *Epidendrum vegae* belongs to the Coronatum group, Aristisepalum subgroup, which has a caespitose habit, simple stems, sub-coriaceous leaves, a racemose inflorescence without spathaceous bracts, and the aristate sepals. The species is a short, lithophytic herb, has large red to bright orange flowers with a short (7.5 mm), thin column, 5-veined sepals and petals, the lip 3-lobed with 3 low parallel keels, and a very small, semi-orbicular, entire, mid-lobe. It is closely related to *Epidendrum jalcaënse* which is epiphytic and much taller (to 56 cm), petals 6-veined, the 3-lobed lip has 3-5 keels, the mid-lobe is emarginate forming a couple of semi-orbicular lobes, and the 10 mm long column is stout and thick. *Epidendrum camilo-diazii* Hágsater & Chocce has tall stems (to 90 cm), bright orange-red flowers, bilobed, emarginate lip with a single wide, low, fleshy keel, and straight, ovate, emarginate petals, sepals and petals 5-veined, and a long (10 mm), straight column.



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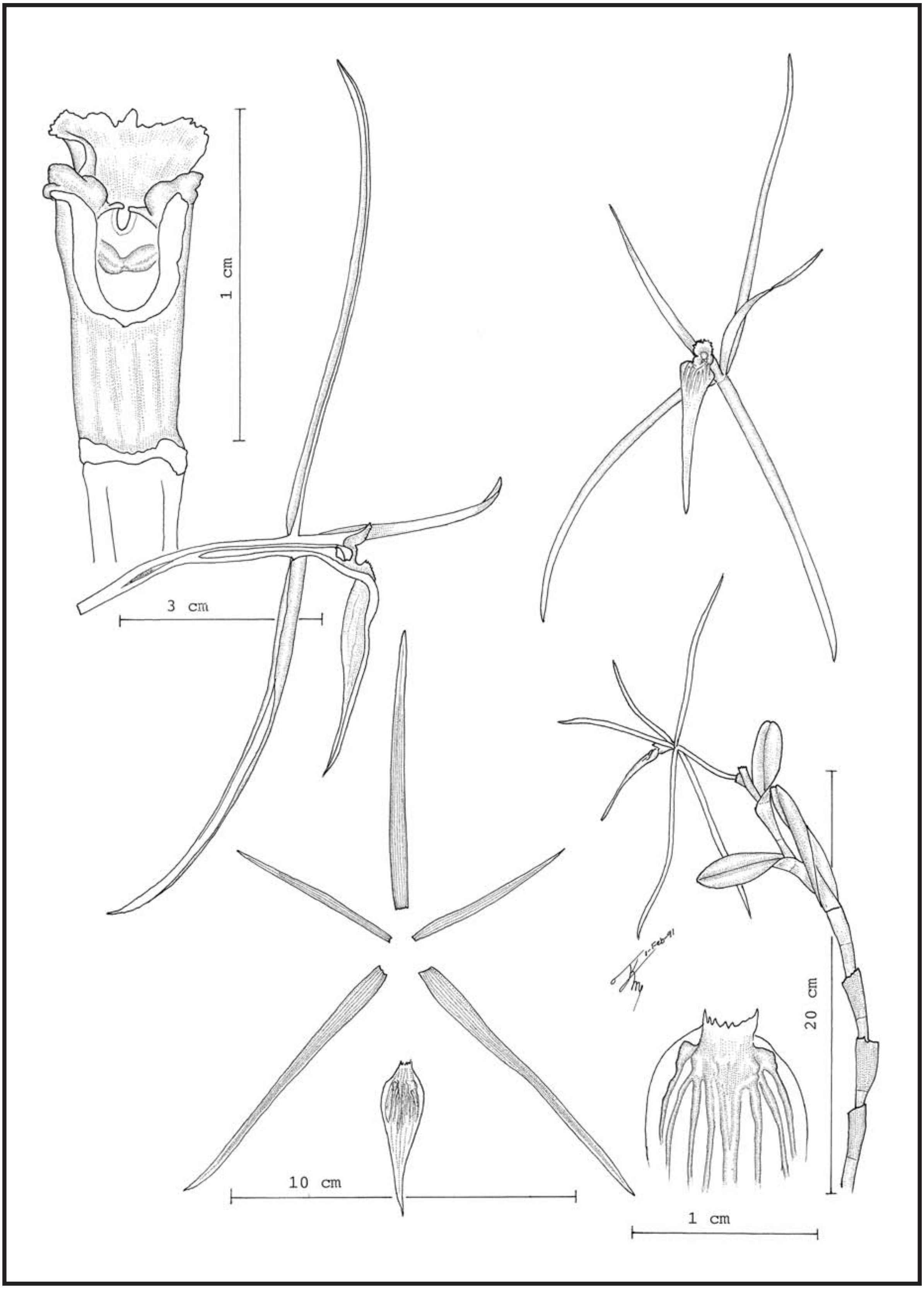
CONSERVATION STATUS: DD. Data deficient. Known only from the type locality.

ETYMOLOGY: In honor of Nanette Vega, the biologist who participated in the collection of the material from which the type specimen was prepared.

REFERENCES: Chocce, M., S. Dalström, E. Hágsater & J. Arnais, 2010, *Epidendrum jalcaënse* (Orchidaceae), a new species from northern Peru, **Lankesteriana** 9(3): 529-531.

ACKNOWLEDGEMENTS: We thank the staff at the San Marcos Herbarium (USM); APECO (Peruvian Association for Conservation) and CI (Conservation International) both institutions supported this work through the "Becas María Koepcke" program.

Authors: M. Chocce & E. Hágsater **Illustrator: M. Chocce** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM WERFFII Dodson & Hágsater **Plate 1398**

EPIDENDRUM WERFFII Dodson & Hágsater, Icon. Plant. Trop. ser 2: pl. 492. 1989.

Type: ECUADOR: Esmeraldas: km 14 Lita to Alto Tambo, 810 m, 10 July 1988, ***Calaway H. Dodson & Alwyn H. Gentry 17495***. Holotype: QCNE. Isotype: MO!

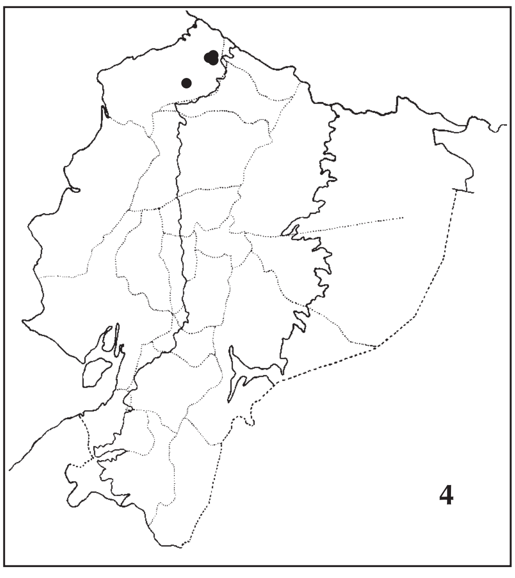
Hierba epífita, simpodial, cespitosa, 20-40 cm de alto. **Raíces** basales, carnosas, delgadas, 1-2 mm grosor. **Tallos** sencillos, tipo caña, lateralmente comprimidos, rectos, 13-34 x 0.2-0.3 cm. **Hojas** 6-8, distribuidas a lo largo del tallo; vaina foliar lateralmente comprimida, ancipitosa, lisa, 1.5-2.5 cm de largo; lámina foliar oblongo elíptica, ápice retuso, bilobado, coriácea, de color verde ocre, 3-9 x 1.4-2.2 cm. **Inflorescencia** apical en el tallo maduro, subsésil, florece durante varios años. **Bráctea floral** mucho más corta que el ovario, ovada, aguda, 6 x 3 mm. **Flores** 1-2, sucesivas, en sucesión durante varios años, resupinadas, verde pálido, sin fragancia. **Ovario** ligeramente engrosado detrás del perianto, terete, no ornamentado, 35 x 1.7 mm. **Sépalos** coriáceos, extendidos, linear lanceolados, acuminados, 5-nervados, con nervaduras que se originan casi de la base de las principales dando la apariencia de ser hasta 10-nervados, margen entero, revoluto, 84-90 x 4.5-5.0 mm. **Pétalos** extendidos, linear lanceolados, acuminados, 3-nervados con algunas nervaduras secundarias dando la apariencia de ser 5-nervados, margen entero, extendido, 52-60 x 2-3 mm. **Labelo** unido a la columna, angostamente lanceolado, acuminado, base ligeramente cordada, 33-45 x 8-10 mm; ecalloso, el disco con nervaduras engrosadas que van desde la base hasta la mitad. **Columna** recta, ligeramente dilatada hacia el ápice, 9-14 x 1.5-2.0 mm. **Clinandrio** muy prominente, cónico, margen eroso, 4 mm de largo; **Antera** no vista. **Polinios** 4. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando 1/2 de la cavidad estigmática. **Nectario** prominente, penetrando ½ del ovario, no ornamentado. **Cápsula** no vista.

Epiphytic, simpodial, caespitose **herb**. **Roots** basal, fleshy, thin. **Stems** simple, cane-like, laterally compressed, erect. **Leaves** 6-8, distributed along the stem; sheaths laterally compressed, ancipitose, smooth; blade oblong-elliptic, apex bilobed, coriaceous, ochre-green. **Inflorescence** apical, from the mature stem, sub-sessile, flowering during several years. **Floral bracts** much shorter than the ovary, ovate, acute. **Flowers** 1-2, successive, resupinate, pale green. **Ovary** somewhat inflated behind the perianth, terete, smooth. **Sepals** coriaceous, spreading, linear-lanceolate, acuminate, 5-veined, branched nearly from the base so as to appear 10-veined, margin entire, revolute. **Petals** spreading, linear-lanceolate, acuminate, 3-veined with a pair of secondary veins so as to appear 5-veined, margin entire, spread, about half the length of the sepals. **Lip** united to the column, narrowly lanceolate, acuminate, base slightly cordate; ecallose, the disc with thickened veins spreading from the base to the middle of the lip. **Column** straight, slightly dilated towards the apex. **Clinandrium-hood** very prominent, conical, margin entire. **Rostellum** subapical, slit. **Nectary** prominent, penetrating half the ovary, smooth.

OTHER SPECIMENS: ECUADOR: Esmeraldas: El Silencio, 250 m, 8 IX 1998, *Cornejo 6421,* QCNE! km 12 Lita to Alto Tambo, 725 m, V 1987, *Dodson 17155,* MO! QCNE! km 12 Lita to Alto Tambo, 725 m, hort. Río Palenque, 25 XI 1988, *Hágsater 9756,* (flower in spirit) AMO! (Illustration voucher). km 12 Lita to Alto Tambo, 725 m, XI 1988, *Hirtz 3909,* MO! Reserva Indígena Awa, 250 m, 16 III 1991, *Rubio 1216*, QCNE!

DISTRIBUTION AND ECOLOGY: Endemic to northern Ecuador, on the lower western slope of the Andes. Epiphytic, 15 m high on trees in rainforest with extremely high rainfall (8000 mm), at 250-850 m altitude. Flowering from March to November.

RECOGNITION: *Epidendrum werffii* belongs to the Difforme Group which is characterized by the caespitose, sympodial plants, fleshy, pale green to glaucous leaves, apical inflorescence, sessile, rarely with a short peduncle, one-flowered to corymbose, without spathaceous bracts, fleshy, green to yellowish-green rarely white flowers. The species can be recognized by its laterally compressed stems, coriaceous ochre-green leaves, 1-2 large, green, star-like flowers, floral segments very long, sepals 84-90 mm long, linear-lanceolate, lip entire, narrowly lanceolate, acuminate, ecallose; clinandrium-hood prominent, conical, erose. It is found sympatric with *Epidendrum williamsii* Dodson and without flowers nearly impossible to distinguish from it, but that species has much smaller flowers (sepals 10-15 mm long) with very differently shaped segments.

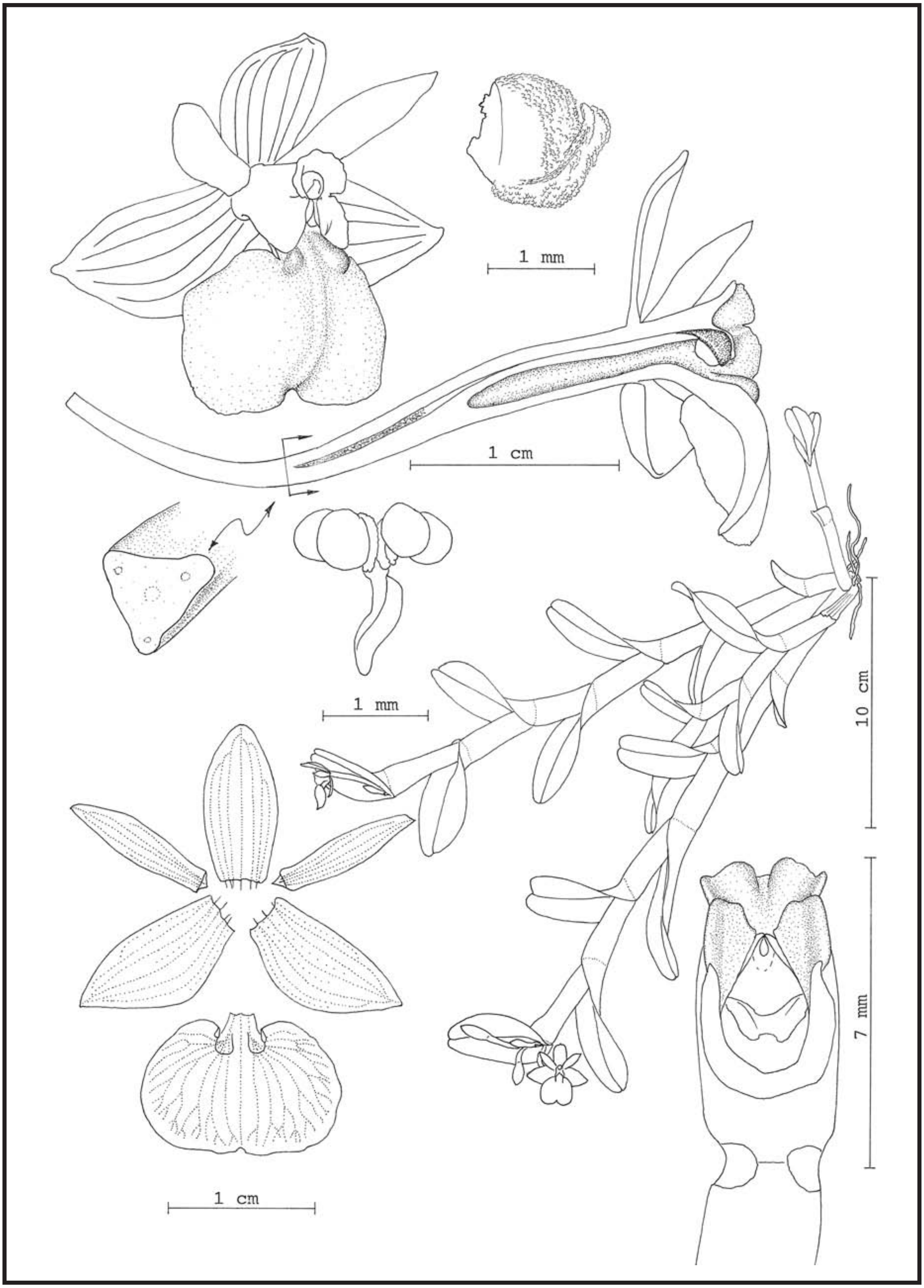


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CONSERVATION STATUS: Probably vulnerable. The area from which the species was collected was cleared for agriculture; areas further away and where the species probably exists have been declared forest reserve.

ETYMOLOGY: In honor to Dr. Henrik van der Werff who participated in the collection of the first plant of this species; he is specialized in Lauraceae, pteridophytes, at the Missouri Botanical Garden and has collected extensively in Tropical America.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM WILLIAMSII Dodson **Plate 1399**

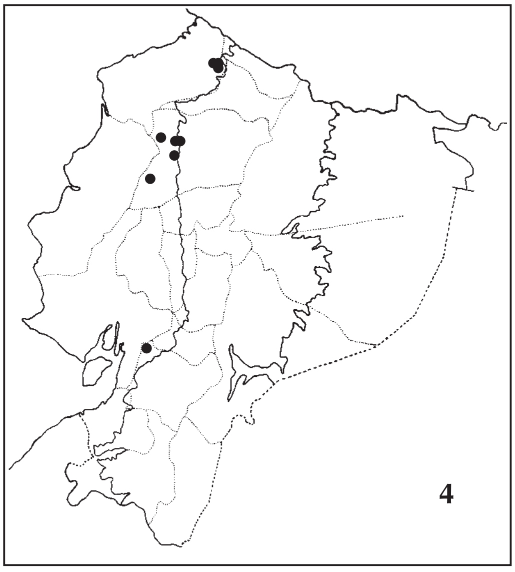
EPIDENDRUM WILLIAMSII Dodson, Selbyana 2:53. 1977.

Type: ECUADOR: Pichincha: near bridge over Río Chiguilpe 7 km S of Santo Domingo near junction with Río Baba, alt. 450 m, 15 August 1975, ***Calaway H. Dodson 5946.*** Holotype: SEL!

Hierba epífita, simpodial, cespitosa, 20-40 cm de alto. **Raíces** basales, carnosas, filiformes, 0.4-0.7 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente comprimidos, flexuosos, 14-35 x 0.3-0.7 cm. **Hojas** 6-9, equidistantes a lo largo del tallo; vaina foliar lateralmente comprimida, lisa, 3.0-3.7 cm de largo; lámina foliar angostamente elíptica a ovada, ápice retuso, no ornamentada, margen entero, coriácea, lisa, carina dorsal baja, verde, 4.5-6.5 x 0.8-2.4 cm. **Inflorescencia** apical en el tallo maduro, florece una sola vez, subsésil. **Bráctea floral** más corta que el ovario, ovada, aguda, 2-3 x 1.3-2.0 mm. **Flores** 1 a 3 (hasta 4), simultáneas, abriendo en sucesión, con una sola flor abierta y uno o dos botones en desarrollo, resupinadas, verdes; fragancia no detectada. **Ovario** inflado en su tercio superior, trígono, no ornamentado, 23-25 x 1.0-1.5 mm. **Sépalos** coriáceos, glabros, libres, ápice agudo, 5-nervado, margen entero, extendido; el **dorsal** elíptico, 10-15 x 3 mm; los **laterales** oblicuamente elíptico ovados, 10-13 x 4 mm. **Pétalos** membranáceos, extendidos, libres, angostamente elípticos, ápice agudo, 3-nervados, margen entero, extendido, 10 x 1.5-1.7 mm. **Labelo** unido a la columna, entero, reniforme, coriáceo, margen entero, ápice ligeramente emarginado, 9-12 x 15-17 mm; bicalloso, los callos pequeños, subglobosos. **Columna** recta, gruesa, 3.3-4.0 x 1.5-2.0 mm. **Clinandrio** ligeramente sobrepasando la columna, cónico, entero, margen ligeramente crenado, 0.9-1.2 mm de largo. **Antera** subesférica, con una quilla roma al frente, 4-locular. **Polinios** 4, subiguales, subglobosos; caudículas suaves y granulosas, semejantes en longitud a los polinios; viscidio viscoso, translúcido. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** penetrando 1/3 de la cavidad estigmática. **Nectario** penetrando 1/2 del ovario, no ornamentado. **Cápsula** trígona, 20 x 5 mm

Epiphytic, simpodial, caespitose **herb**. **Stems** lateraly compressed, flexouse. **Leaves** narrowly elliptic to ovate, coriaceous, somewhat carinate, apex retuse. **Inflorescence** apical, subsessile. **Floral bracts** shorter than the ovary, ovate, acute. **Flowers** 1-3(4), simultaneous, resupinate, green. **Ovary** inflated, trigonous, unornamented. **Sepals** coriaceous, glabrous, free, acute, margin entire, spreading, 5-veined; the **dorsal** elliptic; the **lateral** obliquely elliptic-ovate. **Petals** membranaceous, spreading, free, narrowly elliptic, acute, margin entire, 3-veined. **Lip** united to the column, entire, emarginate. **Column** stright. **Clinandrium-hood** conical, somewhat crenate. **Anther** sub-spheric, keeled. **Pollinia** 4, sub-equal, sub-globose; caudicles soft and granulose; viscidium viscose, translucid. **Rostellum** sub-apical, slit. **Nectary** penetrating half of the ovary, unornamented. **Capsule** trigonous.

OTHER SPECIMENS: ECUADOR: Azuay: Jesús María-Molleturo road, about 13 km from Guayas border, 1200 m, 16 VII 1977, *Boeke 2174,* NY! SEL! **Carchi:** Region of Lita on railroad from Ibarra to San Lorenzo, 600 m, 16 VII 1986, *Hirtz 2928,* MO! **Esmeraldas:** Along road under construction from Lita to Alto Tambo (21 kms), 750-850 m, 19 V 1987, *Dodson 17128,* AMO! km 27.8 camino Lita a San Lorenzo, abajo de Alto Tambo, 670 m, coll. 11 VII 1990, press. 17 V 1991, *Hágsater 10648,* AMO! Ibid. press. 16 VI 1992, AMO! Ibid. press. 26 II 1993, AMO! km 15.2 camino Lita a San Lorenzo (campamento), 850 m, 17 XII 1990, *Hágsater 10656,* AMO! 5 km de Lita, en la nueva carretera a San Lorenzo, Río Mira, 720 m, 20 VIII 1989, *Palacios 4364,* MO! **Pichincha:** Hotel Zaracay, Quito-Santo Domingo, 671 m, XI 1961, *Dodson 1240,* MO! QCA! SEL! Santo Domingo, Hotel Zaracay, 675 m, 15 VI 1967, *Dodson 3702,* AAU! QCA! SEL! In Coperativa Santa Marta #2 along Río Verde, 2 km SE of Sto. Domingo de los Colorados, 530 m, 5 II 1979, *Dodson 7747,* SEL! 2 km W of Tandapi on new road Quito-Santo Domingo, 1400 m, 21 III 1980, *Dodson 9593,* SEL! At 3 km bypass around Santo Domingo, 550 m, 11 II 1986, *Dodson 16326,* MO! Outskirsts of Santo Domingo de los Colorados, Río Chiguilpe, ca. 550 m, 6 II 1979, *Gentry 24716,* MO! Santo Domingo de los Colorados, Hotel Zaracay, 3800 ft, coll. 8 VI 1983, press. 10 IX 1983, *Hágsater 7571,* AMO x2! (Illustration voucher). Sto. Domingo de los Colorados, ca. 550 m, coll. 9 XII 1986, press. 24 VIII 1987, *Hágsater 9058,* AMO x2! Quito, Pto. Quito, 700 m, IV 1984, *Hirtz 1633,* AMO! Tandapi, Quito-Santo Domingo, 1400 m, 1 II 1984, *Hirtz 1735,* MO! Finca La Carlita, 11 km W of Santo Domingo de los Colorados, on road to Chone, 13 VII 1977, *Iltis E-266A,* WIS!



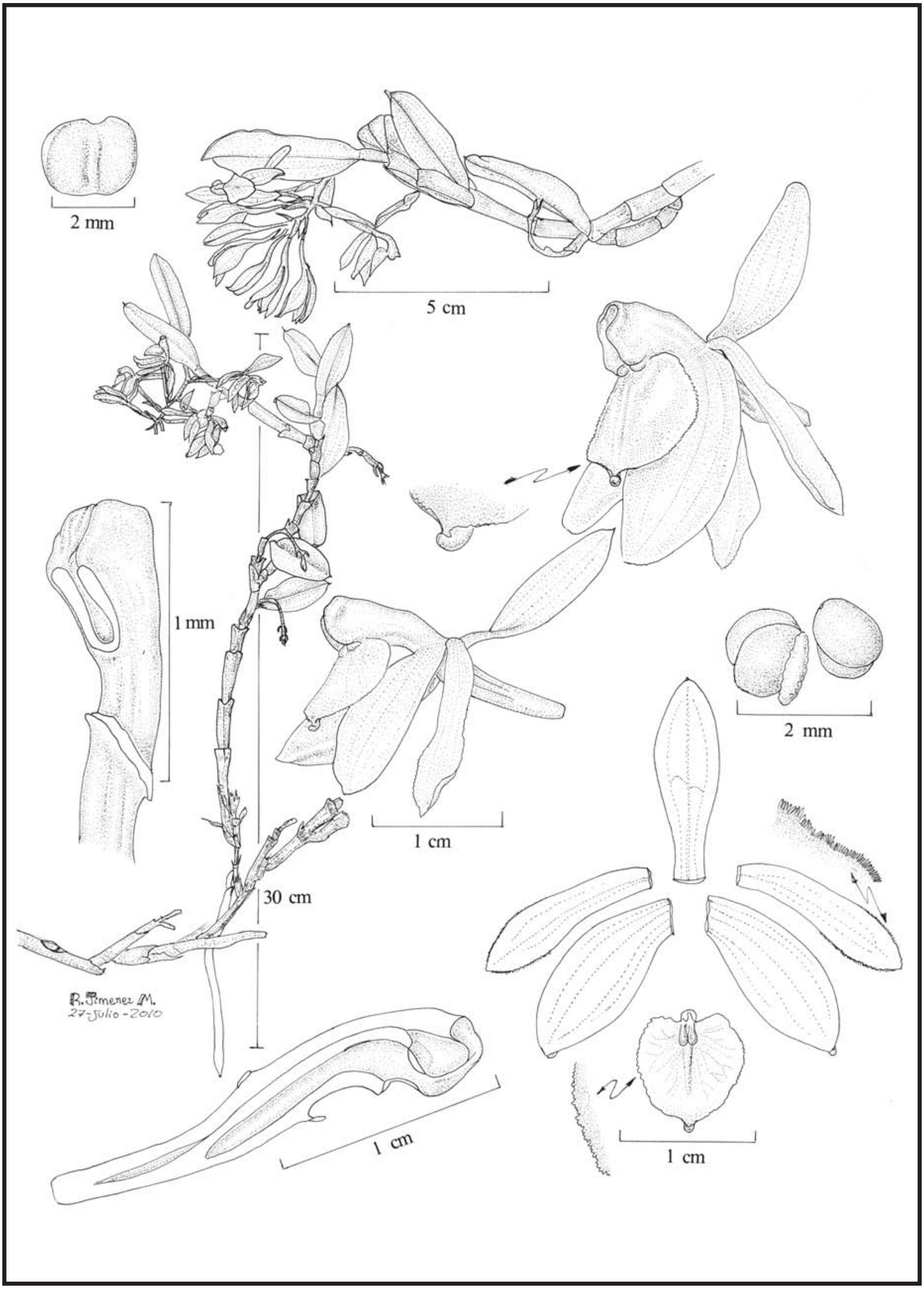
DISTRIBUTION AND ECOLOGY: Endemic to the western slopes of the Andes in Ecuador. Epiphytic in rainforest, from 450 to 1400 m altitude. Flowering from February to June.

CONSERVATION STATUS: DD. Data deficient.

RECOGNITION: *Epidendrum williamsii* belongs to the Difforme Group which is characterized by the caespitose, sympodial plants, fleshy, pale green to glaucous leaves, apical inflorescence, sessile, rarely with a short peduncle, one-flowered to corymbose, without spathaceous bracts, fleshy, green to yellowish-green rarely white flowers. The species can be recognized be recognized by its laterally compressed stems, 1-3 small, successive flowers, ovary trigonous, lip reniform, emarginate. It is very similar vegetatively to *Epidendrum werffii* Dodson & Hágsater which is found in the same area, but that species has 1-2, larger flowers, sepals (90 mm long) and petals lanceolate, acuminate.

ETYMOLOGY: Named in honor of Dr. Norris H. Williams, of Florida State University, who fruitlessly studied the pollination of this species.

REFERENCES: Dodson, C. H., 1977, New Orchids from western Ecuador, **Selbyana** 2: 53. Dodson, C. H., & P. M. Dodson, 1980, Orchids of Ecuador. **Icon. Pl. Trop.** 1: pl. 098.



EPIDENDRUM YANACHAGAËNSE Hágsater **Plate 1400**

EPIDENDRUM YANACHAGAËNSE Hágsater, *sp. nov.*

Type: PERU: Pasco: Huancabamba; Santa Bárbara, 1 km el E de la Escuela, zona de amortiguamiento del Parque Nacional Yanachaga-Chemillén, 10°21'48"S 75°49'32"W, 3390-3420 m, 29 January 2005, ***Edgardo Ortíz V., Franco Mellado N., Abel Monteagudo M. & R. Francis J. 2454.*** Holotype: MO 6117951! (Illustration voucher).

Epidendro soratae Rchb.f. simile sed habitu minore, floribus bis majoribus, labello suborbiculari ad basem leviter cordato et margine crenulato distinguibile.

Hierba epífita, monopodial, erecta, donde el nuevo tallo se produce de un internudo subapical del tallo anterior, 30 cm de alto. **Raíces** basales del tallo principal, carnosas, delgadas, 2-3 mm de grosor. **Tallos** ramificados, tipo caña, teretes en la base y lateralmente aplanados en el ápice, muy delgados; tallos 3-17 x 0.2-0.8 cm; algunas ramificaciones muy cortas (aparentando ser inflorescencias laterales). **Hojas** 3-7 en los tallos superiores, alternas, articuladas; vaina algo infundibuliforme, estriada, verrugosa, 4-10 x 1-2 mm; lámina elíptico ovada, obtusa, diminutamente apiculada, margen entero, subcoriácea, 0.8-4.0 x 0.9-1.3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, florece una sola vez, corta, 3-5 cm de largo; pedúnculo aplanado, delgado, 10-20 mm de largo; con una bráctea angostamente triangular, acuminada, 3 mm de largo en el internodo. **Bráctea floral** mucho más corta que el ovario, triangular lanceolada, acuminada, abrazadora, 2-9 mm de largo. **Flores** 8-10, sucesivas, llegando a estar varias abiertas a la vez, resupinadas, de color verde; sin datos de fragancia. **Ovario** terete, delgado, liso, no inflado, 10-20 mm de largo. **Sépalos** extendidos, libres, obtusos, 3-nervados, margen entero, extendido; el **dorsal** elíptico, con un cuello estrecho en la 1/5 parte basal, 15-16 x 5-6 mm; los **laterales**, elípticos, fuertemente falcados, obtusos, con una quilla dorsal baja, 15-16 x 6-7 mm. **Pétalos** extendidos y falcados hacia abajo, libres, oblanceolados, obtusos, 3-nervados, margen finamente eroso hacia el ápice, extendido, 15 x 4 mm. **Labelo** unido a la columna, suborbicular, convexo en posición natural, ligeramente cordado en la base, apiculado, margen finamente crenado, 8-9 x 7-9 mm; bicalloso, callos globosos, cortos; disco con una quilla intercallosa, baja, que se desvanece antes de llegar al ápice de la lamina. **Columna** ligeramente arqueada, estrecha a la mitad basal, 10 mm de largo. **Clinandrio** reducido, margen entero. **Antera** subglobosa a subreniforme, con una quilla al frente, 4-locular, 1.8 x 2.3 mm. **Polinios** lenticulares, con un par de caudículas granulosas ligeramente más cortas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** pequeños, ocupando 1/3 del largo de la cavidad estigmática. **Nectario** poco profundo, penetrando 1/3 del ovario, sin formar una vesícula. **Cápsula** no vista.

Epiphytic, monopodial, erect, the new stem arises from a sub-apical internode of the previous stem, **herb**. **Roots** basal from the main stem, fleshy, thick. **Stems** branching, cane-like, terete at the base, laterally compressed towards the apex, upper stems progressively shorter. **Leaves** 3-7 on the upper stems, alternate, articulate; sheath infundibuliform, striated, verrucose; blade elliptic-ovate, obtuse, minutely apiculate, sub-coriaceous, margin entire. **Inflorescence** apical, racemose, flowering only once, short; peduncle laterally compressed, thin, with a small, narrowly triangular acuminate bract at an internode. **Floral bract** much shorter than the ovary, triangular-lanceolate, acuminate, amplexicaul. **Flowers** 8, successive, though several are open at one time, resupinate, green. **Ovary** terete, thin, smooth, not inflated. **Sepals** free, spreading, obtuse, 3-veined, margin entire, spreading; dorsal sepal elliptic, with a narrow neck at the basal 1/5th; the lateral sepals elliptic and strongly falcate, with a low dorsal keel. **Petals** spreading and falcate downwards, free, oblanceolate, apex obtuse, 3-veined, margin minutely erose towards the apex, spreading. **Lip** united to the column, sub-orbicular, convex in natural position, base slightly cordate, apex apiculate, margin crenate; bicallose, the calli short, globose; disc with a low mid-keel that disappears before reaching the apex of the lip. **Column** narrowed in the middle. **Clinandrium-hood** reduced, margin entire. **Rostellum** apical, slit. **Antera** sub-globose to sub-reniform, with a keel in front, 4-celled. **Nectary** shallow, penetrating 1/3 of the ovary without forming vesicle.

OTHER SPECIMENS: None seen.

DISTRIBUTION AND ECOLOGY: Known only from southern Peru, on the eastern slopes of the Andes, epiphytic at 3390-3420 m altitude. Flowering in January.



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RECOGNITION: *Epidendrum yanachagaënse* belongs to the Soratae Subgroup of the Scabrum Group which is characterized by the branching habit starting on a monopodial, primary stem, infundibuliform, rugose leaf-sheaths, lanceolate, aristate, acute leaves, racemose sub-capitate inflorescence on a short, thin peduncle, and the bicallose lip. The species is recognized by the small plants with very short branches, leaves elliptic-ovate, 0.8-4.0 x 0.9-1.3 cm, green flowers, sepals 15-16 mm long, wide and falcate, the petals are oblanceolate, falcate, wide and 3-veined, and a sub-orbicular lip slightly cordate at the base, the margin crenate. *Epidendrum soratae* Rchb.f. has taller plants, 22-27 cm tall, lanceolate leaves 1.7-4.7 cm long, 8-12 yellowish green flowers, sepals 6.7-7 mm long, and a reniform lip, the base deeply cordate, the margin entire. *Epidendrum obliquum* Schltr. has plants up to 57 cm tall, lanceolate leaves 2-4 cm long, and a reniform lip with entire margin, the column straight and the ovary is not inflated.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to the Parque Nacional Yanachaga-Chemillén, close to locality which the species was collected. The National Park was established in 1986.

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